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TIME AND MODERN METAPHYSICS. II.

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Much idealist philosophy has been contemptuous of time. It has made much of that feeling of which Russell speaks. "If," said Bradley, "there be no supreme spiritual power which is above chance and change, our own spiritual interests surely are not safeguarded. But with any such power it seems to me nonsense to talk of the absolute reality of time."[1]

Later, in "Appearance and Reality," Bradley urges that whatever way we look at it time is self-contradictory. "If we take time as a relation between units without duration, then the whole time has no duration and is not time at all. But if we give duration to the whole time, then at once the units themselves are found to possess it, and they thus cease to be units. Time, in fact, is 'before' and 'after' in one; and without this diversity it is not time. But these differences cannot be asserted of the unity on the other hand, and failing that, time is helplessly dissolved."[2] Further, he continues, "If we take the presented time, that involves change, a 'now' becoming a 'then.' Thus, if in any time we call presented, there exists any lapse, that time is torn by a dilemma, and is condemned to be appearance. But if the present is timeless another destruction awaits us. Time will be the relation of the present to a future and a past; and this relation, as we have seen, is not compatible with diversity or unity."[3]

Bradley argued that time is in itself not only paradoxical but contradictory, hence he concluded it must be only appearance. We must object, however, to Bradley's way of putting the case. Contradictoriness is a feature of propositions, not of existences or facts. Time is a fact, and, however paradoxical in character it may appear to be, however contradictory the propositions asserted about it may be, time cannot itself be contradictory. It may appear incompatible with other features of reality, but these incompatibilities are largely due to our judging time by standards which omit all temporal reference. If we set up a view of the Universe which makes the sequence of past, present and future appear impossible, or incompatible with it, then so much the worse for the original view and initial standpoint. Anyone who proceeds thus is naturally entangled in dialectical difficulties, and cannot fairly complain if he cannot see through the dust he has himself raised. For he has been guilty of making originally the false abstraction of time from the temporal events of which alone he has experience. If Bradley, or anyone else so minded, finds the abstraction unintelligible, or sees time as then incompatible with it, so much the worse for the abstraction, and obviously the remedy lies in his own hands.

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[1] Bradley: "Essays on Truth and Reality," page 250.
[2] Bradley: "Appearance and Reality."
[3] Bradley: "Appearance and Reality."

On closer examination of Bradley's position, however, we can see that we are compelled to analyse more closely what he can mean by his view that time is contradictory or incompatible with other aspects of reality. He may mean that our description of time is paradoxical and contradicts its true nature, but this would in itself prove nothing about time. Further, to argue, as he does, that time is inconsistent, or self-contradictory, again overlooks the essential feature of time. We know that time is what it is because succession is contained in duration. This is a fact, and it cannot be argued away by logic, since we experience both as facts. To do so is to assume an *a priori* abstraction which is not in accord with our temporal experience. That experience is precisely the experience of succession *in* duration. If Bradley means that time is inconsistent with other features of reality, it must be remembered that he does not indicate what those features are. If time is appearance, so is our experience. But it cannot be claimed that experience is appearance for that would contradict science and philosophy, as in both we use experience as our critical weapon in laying bare mere appearance. Time cannot, therefore, be appearance. Bradley has erected a system abstracted from time by which he expects to judge and reject time. But the real outcome of his view is not that time is self-contradictory, but that his Absolute is self-contradictory, and that largely because he has neglected the facts of our temporal experience and omitted time from his conception of the Absolute.

An outstanding giant in the discussion of the reality or unreality of time has been the Cambridge philosopher McTaggart. He argues that everything in time is past, present, or future, but as these are incompatible predicates, the time series is self-contradictory and unreal. He conceives the temporal process as leading up to an end which is timeless.

There is a progressive realisation of the timeless reality so that, eventually, "the last enemy to be overcome (before we achieve eternity) is time."[1]

To this view of McTaggart's the objection can be raised (as equally against some theological views of time) that the time process leads up to its contradictory, eternity. The time process is, as it were, artificially "stuck on" at the front, but is denied participation in ultimate reality. Mackenzie objects that instead of saying with McTaggart that eternity is in a certain sense in time, we should say that time is in a certain sense in eternity.[2] Reyburn, in an article on "Idealism and the Reality of Time," has well argued, in criticism of McTaggart, that his arguments cannot be accepted as implying that Idealism must deem time to be unreal.[3] The facts of change and time cannot be absorbed into a mere abstract timelessness. They are too concrete for that. Why not, then, take the time process as an essential aspect of the eternal reality, not negated but transcended. Succession and duration blend in our own experience. Man recognises the flux, the transience of many events and things, but he finds, too, that there are spiritual values, ideals and conceptions which abide because they have meaning and significance which is timeless.

McTaggart has argued that time is unreal because the past does not exist, nor does the future, while the present is a mere point without breadth, *i.e.* without duration, or is a mere imaginary line. This argument involves the supposition that nothing can be real which is devoid of fixed or definite unchanging duration, and it overlooks the reality of change. It fails to come up to the problem of time and its essentials. We live through time, we do not stand still in it. Time and tide wait for no man. Time is a function of change, and the argument entirely overlooks the reality of changing objects. While they change they endure for longer or shorter times. Without again raising here the question whether it is not false to regard the present as a point or a line in view of our experience of a specious present or of duration it can be seen that this argument reverts to a view of the universe which is static like the unmoved and unmoving One of Parmenides.

That change is a feature of our Universe, and a real feature cannot be denied. It is, of course, a different question whether we consider change to be a single feature or to look on it as bound up with duration and with some element of permanence.

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[1] McTaggart: "The Unreality of Time" (*Mind*, October, 1908). "The Relation of Time and Eternity" (*Mind*, July, 1909). *Vide* also *Contemporary British Philosophy*, Volume I.

[2] Article, "Eternity," *Encyclopædia of Religion of Ethics.*

[3] Reyburn in *Mind*, October, 1913.

It is futile, however, to dispose of time in the way in which this argument attempts light-heartedly to do. The denial of change has been attempted by some other philosophers, and these have usually denied the reality of time.

The argument goes too far, for it not only would disprove the reality of time alone but also the reality of events.[1] But the qualities of past, present and future do not involve unreality, even if they do not involve continued existence. Indeed, past, present and future are not characteristics which in any way belong to the events, as events, but only express relations in time between the event and some other event, or events, such as my mind knowing or experiencing the event or the minds of other beings. Every event we may say is past, present, or future, and the admission of this does not, in spite of McTaggart's argument in a notable article on "The Unreality of Time," involve a vicious circle or infinite regress.[2] There is no incompatibility in the three predicates—past, present, future. They can all be true without contradiction. This can be seen by taking a proposition from history such as McTaggart employs, "Queen Anne is dead." This proposition expresses an event which is past, was present, and was future. It is past to us or to George I., it was present on the first day of August, 1714, and was future to a man who died in 1710. These statements are true and illustrate how an event can be all three, future, present and past, but they do not prove that time is therefore unreal, as Broad, in his argument against McTaggart on this very point, has shown. The fundamental becoming of the universe brings new events into being and alters their presentness, pastness, or futurity.[3] Indeed, the temporal relations given in these statements are real for all time, they stand independently of the further march of time, being timelessly true. But that does not imply that time is unreal.

Writing in the recent volume of collected contributions, *Contemporary British Philosophy,* of the nature of existence, he remarks that, if we are certain *a priori* that nothing with the quality of X can be real, we can be certain that any empirically-known characteristic which involves the quality X cannot be true of reality. "It seems to me," he continues, "that one empirically-known characteristic which cannot really belong to anything that exists, is the characteristic of time."[4]

His argument, as expounded sixteen years previously in the article in *Mind,* briefly resolves itself into the following propositions. Nothing can be in time unless it forms a series past, present and future (an "A" series). Nothing again can be in time unless it forms a series of earlier-and-later (a "B" series). But the Series "A" is self-contradictory for every term of it is past, present and future while these three predicates are themselves incompatible. McTaggart admits, however, that the time-series is not totally erroneous. The terms which appear to us as a temporal series connected by the relation of "earlier than," form a *non-temporal* series connected by another relation. The "A" Series of McTaggart is declared by him to be unreal because he *assumes* the reality of the purely logical "C" Series. As a matter of fact, the series of before and after is not sufficiently appreciated by him. This objective relation is not the same as the subjective relation of past, present and future.

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[1] Leibnitz employed this argument against the view of absolute time.
[2] McTaggart, in *Mind,* 1908.
[3] See Broad's criticism, *Scientific Thought.*
[4] *Contemporary British Philosophy,* page 269.

Although past, present and future are used of the same event, they are so used at different times. McTaggart is quite out of order in using the seeming contradictoriness of these predicates to disprove the reality of time. Their meaning depends on time and is relative to time. Omission of this vital primary consideration will, of course, lead to contradictions. Again, we cannot correctly admit that predicates used at different times are contradictory. Judgments are the real contradictories not simply predicates, which although different may in their turn be each perfectly valid.

McTaggart himself goes on to suppose that there is a state of good which, *sub specie temporis,* lies in the future and is reached in finite time, but is itself endless. The time required to reach it may have any finite length, however great, and we do not know how much evil may await us during that period. We do know, he claims, that all the evil of the future and the past are surpassed infinitely in value by the good that lies at the end of time. The last enemy to be overcome, he thinks, is time, so that he thus, although denying the reality of time, proceeds on his spiritual pilgrimage to eternity *viâ* the road of time.

For McTaggart, neither future and past nor better and worse can be really adequate judgments of a timeless and perfect universe. The world in his view is not in time, it has no temporal characteristics, it is timeless and perfect. He admits, however, some symbolic sense to time and values, and says rather cryptically that while future and past, better and worse, are inadequate judgments of a timeless and perfect universe, yet "in the sense in which there is a future it may be an improvement on the past."

McTaggart stands as a great protagonist of the unreality of time. But, although his arguments demand more attention than those based on doctrines of infinity, his statement of the contradictoriness of pastness, presentness and futurity is untimable. His scorn of time, like Bradley's, rests on a view of the Universe from which time and change have already been extracted.

Bosanquet's philosophy is also discourteous to time-succession. The whole is a whole in spite of succession, never because of it. In his "Logic" he suggests that our intellect must construct an ideal objective order, not itself in time but in direct contact with the fleeting sensitive experience of every day. In the same work he replies to the query, "Is time real?" Everything is real, so long as we do not take it for what it is not. Time is real as a condition of the experience of sensitive subjects, but it is not a form which profoundly exhibits the unity of things.

In Bosanquet's philosophy it is clear that it is admitted that time exists, and it is therefore for him a feature of the Absolute. But the Absolute itself is not in time, rather time is in it. With this statement we have no quarrel; the difficulties arise in the next step, for Dr. Bosanquet claims that the Whole cannot change. Now, in our view, time is bound up with change. It is impossible to deny the reality of change and endeavour to save the reality of time. Change involves temporal events, for without these there could be no change. Evidently, Bosanquet regarded both time and change as contained within a timeless, changeless Whole. He cannot deny that they (*i.e.* time and change, or temporal events) are a feature of the Whole. If by the term "Whole" is meant the successive plus accumulated plus future totality of events ever real at *any* time, the expression is without meaning. If, on the other hand, he does not mean this, then the statement that the Whole cannot change is equivalent to saying that the Whole exists entirely given, and all novelty or creative effort is a transference of energy or a rearrangement of matter and motion. In this case, novelty is only a conception which arises from a radical confusion of existence and knowledge. Relying on his proposition that 7 + 5 = 12, Bosanquet argues for eternal novelty, but we must keep our judgments distinct from the fact of existence. Time and change must be admitted as features of the Absolute. They are within it, but they are none the less real elements in it.

Of course the Whole cannot change, because the conception of the Whole as thus laid down includes all change, past, present and future. Bosanquet's idea of the Whole, or the Absolute, does not help us to understand the nature of time save as to delimit it as a feature within the Whole, a limitation again to which the same argument applies. If the Whole is thought of at all, it must include time within it, or it would not be the Whole. The reference of the problem to the Absolute is a reference to a point which precludes further discussion and further assertion apart from the admission that, in that Whole, time is a feature. We cannot make a whole including time and then ask if the Whole is in time. The position is contradictory and the question absurd. *Ex hypothesi* we must say, no. If we were to say, yes, apart from a denial of our premise, then the time in which the Whole is, could not be the same as the time that is in the Whole. The position is impossible if we postulate a Whole or Absolute (a proceeding of doubtful value) ; we must adhere to our conception that it is what it purports to be, a true Whole, outside of which there is nothing, not even time.

Bosanquet deprecates the current "moralism" which involves an attitude of mind obsessed by the events of the time process. This attitude, even when expressed in relation to ideas of progress and ethical reform, is the antithesis of religion which stands, in his view, for a recognition of non-temporal values in the time process, an enjoyment of Eternity in the midst of time. This same point of view he shares, in some degree, not only with Bradley and McTaggart, but also with Royce, Von Hugel, Wiekstrad, Mackenzie and Pringle-Pattison.

Pringle-Pattison, in his discussion of time and eternity, shows (as did McTaggart and Mackenzie) that the latter term is not devoid of ambiguity, and that we use it in three different connections.[1]

1. To denote unending extent of time.
2. To denote that which is timeless.
3. To denote that which includes time but somehow also transcends it.

The first usage, referring to mere endlessness, is the general popular one, but has found little favour in philosophy. The second is applied, especially by McTaggart, to timeless laws and truths. Philosophy attaches most importance to the third usage which is not, be it noted, a mere negation of temporal conditions, but includes temporality within itself and transcends the limitations of such temporal conditions.

This use of the term eternity has been prominent in British philosophy in recent years. To the testimony of McTaggart, Mackenzie and Pringle-Pattison, we may add that of the metaphysician and sociologist, Hobhouse, and the theologian, Temple, both contributors to the recent interesting volumes of collected testimonies, published as *Contemporary British Philosophy.*

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[1] Pringle-Pattison: "The Idea of God" (Lecture XVIII, *Time and Eternity*). McTaggart: "The Relation of Time and Eternity," *Mind*, July, 1909. Mackenzie: "Eternity," article, *Encyclopædia of Religion and Ethics.*

Von Hugel, and with him Hocking[1] (as well as writers on mysticism such as Delacroix, Inge, Rufus Jones and Evelyn Underhill), recognises in man a capacity for ascending to a level of experience which transcends the temporal sequence of events. Human life is in their view capable of these "quasi-simultaneities" and achieves its experience on a plane lower than that of the eternal life of God Himself, but indefinitely above the merely mathematical framework of bare succession which is without duration. The life of man with his temporal experience lies, as Von Hugel has expressed it, "between the pure simultaneity of God and mere clock time."[2]

This leaves scope for the really temporal element in human experience to be grasped and seen in its proper perspective. There are qualities inherent in transience which no purely eternal process or simultaneity could replace. No doctrine which regards the transience of time as unreal, while trying to retain it for reality as an order, can avoid the stern accusation of robbing the time process of history (both racial and individual) of its significance in the scheme of things.

"Time is the abstraction of unachieved purpose on the way to achievement." The eternal view of a time process is not mere simultaneity of vision of all parts, given to man in succession, but the view of them as a whole or as members of a completed purpose. The entire objective order of things is not, it can be argued, temporal. The laws of mathematics, the conceptions of Justice, Truth and Beauty are not temporal, for they belong to a system of categories and values for which time is irrelevant.

"Time," says Von Hugel, "in the sense of duration, is for us men not a barrier against eternal life, but the very stuff and means in which and by which we vitally experience and apprehend that life." Man's temporal life is neither a theory nor a vision, nor something ready-made that automatically unrolls itself. It is a drama with tension, struggle, sacrifice, suffering and joy. That drama is enacted through the medium of time, the battle is fought in the field of temporal, finite things and events. It is not a single-handed fight, but one in which there are innumerable combatants and marchers groping onward. They struggle on to achieve some ends, some ideals which they have fashioned and set up for themselves. They are ever seeking to escape from change, from the mere succession of events and to grasp, to realise and to enjoy those ends as eternal values which, permanent, timeless and unchanging, are the very attributes of God Himself in whom and for whom time and eternity are one."

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[1] Hocking: *The Meaning of God in Human Experience.*
[2] Von Hugel: *Eternal Life.*

The culmination of idealist thought in the sphere of contemporary metaphysics is found in the neo-idealism of the Italian thinker, Gentile. His philosophy is based on a view that mind, or spirit, alone is the supreme reality, and that we must conceive of mind as *atto puro,* pure act, pure activity. Reality is characterised as becoming, *devenire.* While, for Alexander, the advance of events is due to the inherent restlessness of space-time, for Gentile, this arises from thought. mind, or spirit as a development in an idealistic direction of the initial consciousness which is the imminent *élan vital* in evolution. We have noted the objections to the subjectivity of Bergson's views. Gentile is even more extreme. He is at pains to distinguish his idealism from that of Berkeley, with whose subjectivist thought it has at first apparent obvious connections. He agrees with Berkeley's *"esse est percipi,"* and approves the view that reality is conceivable only in so far as the reality conceived is in relation to the activity which conceives it. To conceive a reality is to conceive at the same time, as one with it, the mind in which the reality is represented; and therefore, Gentile argues, the concept of a material reality is absurd.[1]

Berkeley's error, he claims, was in explaining reality as the eternal thought of God, of which all human thoughts are but rays. He attempts a transformation of Berkeley's idealism into one in which a transcendental point of view is introduced. This he explains as the view obtained when in the reality of thinking we see our thought, not as act done, but as act in the doing. This act we can never absolutely transcend since it is our very subjectivity, our self, and we can never objectify it. This neo-idealism conceives reality as the continuous thinking activity of a transcendental thinker. Moreover, each human thinker in his transcendental activity of thought is that transcendental thinker, although the object of each human thinker is never the whole of the object created in the thinking of the one universal thinker.

Mind, then, is pure process, and is the ultimate reality. The material world is not real, but only a manifestation. Space and time are the two forms in which the universal thought, or spirit, sets itself out. They appear to be necessary because the reality which is spirit is also activity, development. It is impossible to conceive of a world of space and time existing either before, or independently of, mind. "The forms of space and time are neither antecedent nor consequent. If the forms are the functions by which the object of experience is constituted, then activity can be nowhere else but in experience. Space and time cannot be conceived as empty forms to be filled, as one would fill an empty vessel, with single presentations of sensible experience." Time, Gentile remarks, is the setting out in space of the unity of space. Time, like space, is part of the multiplicity engendered by spirit. We cannot, he admits, fix this multiplicity before us, neither in its whole, such as it is, nor in any of its parts. From beginning to end it is multiplied into a multitude of images of its whole or of its parts, and so is prolonged into the past or into the future.

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[1] Gentile: *Theory of Mind as Pure Act.*

More definitely he says finally, "We are not in space and time; they are in us." Whatever is unfolded, extended in space, or unrolled in successive stages in time, is in us. This is pure subjectivity, and involves, like Berkeley's idealism, denial of a material world as objectively existent. Even if "us" means, as it undoubtedly does, the transcendental ego, not the empirical self, it amounts only to a reduction of space and time to forms of activity of mind.

Gentile will have none of space, or time, or space-time as real. The reality for him is not time, but mind, or spirit. He claims that reality is neither spatial nor temporal in its essence, for it is mind, and mind is neither in space nor in time. This does not mean that no *form* of reality may not be presented in space and time, but it does mean that space and time are not adequately conceived when they are supposed to exist in pure abstraction and as ultimate irreducibles. Gentile thus opposes Alexander's view of space-time as reality, and he differs from him on the status of mind in the universe; but both realist and idealist agree that the Universe is essentially *historical.* "All moments of time," says Gentile, "converge in a present which is not merely situated between past and future, but is a negation of all temporal multiplicity and succession, an eternal Now. This 'compresence,' this eternal present, on which all rays of time converge and from which all irradiate is the intelligibility of time."[1] He suggests that time is only unintelligible when we set it above us and do not admit its concreteness. We cannot explain it away as an abstraction; it is for him, as for Croce, an essential feature of the universe.

"To doubt the intelligibility of time is," as Mackenzie remarks, "to doubt the intelligibility of life itself. Well, if we cannot understand it when we think of it as fleeting we may perhaps succeed better by thinking of it as eternal." To which we would add the query, In what sense is eternal used here? Mackenzie obviously means enduring as opposed to fleeting. It is easier to think the enduring than the fleeting, or, as Alexander puts it, our minds are more susceptible to duration than to succession. It must be borne in mind, however, that however much easier it is to conceive the enduring nature of time, it is precisely an understanding of its fleeting character that we require to understand it. Even idealism cannot explain away time.

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[1] Gentile: *Theory of Mind as Pure Act* (Chapter on "Space and Time").

Such are the discussions of the problem of time in contemporary metaphysics from Guyau and Bergson, the Realists and the Idealists. They are abundant evidence of the soundness of Alexander's words about the discovery of time in recent years. They are evidence, too, of the general soundness of Bosanquet's point made in one of his last publications, *The Meeting of Extremes in Contemporary Philosophy.* No fact in contemporary metaphysics is more striking than that the supposed extremes of idealist and realist viewpoints converge on this problem of time. Too much may be made of this distinction. The terms are, as Bosanquet himself urged, "traditional battle-cries rather than names of precision." Hegel, a thinker whose whole philosophy has been strangely misrepresented, went further and claimed that "such expressions as subjectivity and objectivity, reality and ideality, are simply vague abstractions; the contrast of idealistic and realistic philosophy is of no importance." We find Alexander, in speaking of the age long controversy of Idealism and Realism, remarking that "no sane philosophy has been exclusively either." Not all the thinkers whom we have discussed can be readily classified. What are we to say of Bergson and of Alexander, obviously a realist with great sympathy for idealism? And when we think we have a true realist in Russell we find him admitting some truth, more easy to feel than to state, about the unreality of time which has a very idealistic echo.

Too much, we repeat, has been made of these distinctions, and too readily have realists mistaken idealism for Berkeley's philosophy and erroneously equated it with subjectivism. Yet, in spite of this, these frequently misapplied labels do indicate something. The realist and the idealist look at reality from two diverse points of view. Briefly, for the modern idealist, mind is the creative principle and ultimate form of reality, while for the modern realist, the Universe is a realm in which mind exists, or minds exist, on equal terms with other finite things, and those things exist objectively apart from mind's awareness of them. For Alexander, mind is merely one in a democracy of things. Although the idealist frequently looks on time as too subjective and often ignores objective time, yet the extreme idealist and the extreme realist are in striking agreement about the importance of time. For both alike, the universe is historical through and through. Gentile and Alexander are both convinced of this, however little else they have in common. This is largely because, if we seek to examine time, we find ourselves examining reality. If we set out to investigate reality we cannot ignore time, for, even if we think the Whole itself to be timeless, we must recognise time within that Whole. Hence, as Alexander says, time has been discovered, not that we have waited until today to become familiar with time, but that we have only just begun in our speculation to take time seriously, and to recognise that time is an essential ingredient in the constitution of things. If, then, the universe is *historical* in character, then the determination of the nature and status of time in the universe is a crucial problem for philosophy today. The problem is, as Bosanquet asserted, the central crux of philosophy, and a philosophical position is definitely characterised by the attitude adopted to the course of time.

Whether it be held that the aim of philosophy is to find and define for man his place in the cosmos and his attitude to it, or that philosophy must abandon large synthetic speculations and devote itself to critical and analytical work, an examination of time is imperative for the philosophical thinker of today. He may be inclined, at first, to lay it aside as an ultra-technical point which has little bearing on a general philosophy of life and things. But a study of time is a necessity for any critical and analytical philosophy, and it is also the necessary introduction to any sound and synthetic attitude to the universe and to the complex problems of human activity in its conflicts and larger, nobler aspirations. Such a study must be in short the foundation of any philosophy worthy of the name.

INSTINCT, EMOTION AND APPETITE.

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None can doubt the debt psychology owes to Shand and McDougall for the work they have done in throwing light upon the primary forces of human nature and their relation to the higher system of the sentiments that control them; this point of view has created little less than a revolution in our way of thinking of human nature, and has given us for the first time a fundamental insight into those factors by which order and disorder are constituted within it. In doing this service these critics, but especially McDougall, have at the same time visited a new evil upon the science of psychology by their abuse of the term instinct. Since McDougall wrote his social psychology a new god, instinct, has arisen in the science. The root-forces of all human activity are, we are told, to be found in certain general instincts common to us with the animals. Not a social or educational psychology nowadays but speaks voluminously of the part played by the instincts and their evolution in human nature. It would be strange if after all it should turn out that there are no such instincts, and that McDougall's Instinct is, as has already been asserted by more than one critic, but our old friend the faculty over again. It is the purport of the present article to show that McDougall could have done as much for us without mention of the word instinct; that the root-forces of our nature are to be found in terms of the concrete facts of emotion and appetite, and that there is no need to assert an hypothetical instinct behind these; and that, further, his account would have been then a true one, for he would not have been tempted, in obedience to his god, instinct, to deny a fundamental distinction between two kinds of root-forces in our nature. He might, that is to say, have done all that he has done, if he had substituted for instinct the two terms emotion and appetite.

The word instinct was originally used—a use to which it should have been confined—to denote specialized activities in the animals, notably in the insects, so remarkable as to appear to show reason, but which were evidently not rational. Because we do not know what they then are, we call them instinctive, and refer them to an instinct, words showing our ignorance, but connoting certain definite enough attributes present, that, namely, the activities concerned owe nothing to reason or experience—though experience may enter secondarily—that they are done, primarily at least, without knowledge of the end involved, and that this end serves race preservation or furtherance. The term instinctive is then extended to any general activity owing nothing to reason or experience, and known, directly in ourselves and indirectly in at least the higher animals, to be impelled by feeling and impulse, as movements of escape in the case of fear or of attack in the case of anger. This innate capacity for feeling and impulse is straightway attributed to an instinct, and the thing is done: man becomes a creature of instinct. But this seems to mean nothing more, when we consider it carefully, than the fact that man has certain emotions aroused directly in him through his environment and certain appetites emerging from his own organism.

In the first place, it must be noted that the extension of the term instinct to such general activities as arise from fear, anger, curiosity, etc., seems to rest upon a wrong analogy. In the specialized activities of the animals, as in the web-weaving of the spider or the dam-building of the beaver, we may indeed conjecture—and observation of instinctive activity seems to prove—that there is feeling and impulse present in the animal mind—though what this means in a creature so far removed from us as the insect it is hard to say—yet it has been apparently overlooked that, whereas in fear, anger, etc., the activity of flight or offence is the direct *expression* of the feeling with its impulse, there is no such relation between the spider's weaving and the instinct-interest accompanying it. The bird's feeling is not *expressed by its activity* of nest-building as its fear of man is expressed by flight. There is obviously an essential difference here between two kinds of activity, a difference which McDougall's all-embracing theory of instinct overlooks. In the one case the activity is accompanied, it may be, if you like, determined by feeling, in the other the activity is the expression of feeling. Between feeling and expression there is an observable parallelism: indeed, from the subjective awareness of the feeling of fear or anger one could almost *a priori* deduce their form of expression: what relation of this kind is to be found between instinct and activity? Surely this is a radical distinction, and it is through McDougall's failure to see this that many of his difficulties in dealing with instinct arise. It is a distinction that clearly marks off emotion in man and mammal from instinct, and it is a distinction that must be carried down even into instinct life. In whatever form we must envisage emotion in the insects, there is no doubt that there is an essential difference with them between activity that expresses feeling and activity accompanied by, or determined by, feeling. Thus, when a spider "shams dead," to use the boy's phrase, what we have is an expression of the emotion of fear which might have been expressed by other reactions such as flight or concealment, and involves neither any specialized physiological structure nor any mental structure in terms of racial experience, whereas when the spider spins its web we have an activity, expressing no feeling, but determined, if you will, by feeling, and certainly determined to a fixed form by racial experience and physiological structure. The first form of activity we should refer to an emotion, the second only is it permissible to refer to an instinct. Whether we should give the name instinct to those different motor reactions which an emotion may make use of, is another matter to which further reference will be made.

If we now turn to McDougall's theory of the relation between instinct and emotion, we find that he so defines the primary emotions of anger, fear, disgust, curiosity, etc., as to make them appear as attributes or aspects of instincts behind them, the instinct having at the same time two other aspects, a cognitive and a conative. Thus, fear is aroused by the cognition of some class of object to which it is instinctively attached, and a response is set up—whether by this fear itself or the instinct to which it belongs McDougall leaves us uncertain—in the form of an impulse to a more or less definite form of activity. The problem then arises—since especially in human nature fears, angers and curiosities obviously do not forever cling to their original objects, but come to attach themselves to more and more remote ideas and complexes of ideas—how these ever slip away from the anchorage of these objects and attach themselves to something else. To account for this McDougall calls into play his so called afferent (*i.e.,* cognitive) inlet of the instinct (understood physiologically to consist of a certain arrangement of neurones), and speaks of this as being enlarged through experience. Thus we are asked to believe that the expansion of the range of fears in animal and man is simply the result of the widening of the afferent approach to the instinct of flight. Citing the instance of birds on an uninhabited island that show no fear of man on his first appearance, McDougall says "the absence of fear at the sight of man implies, not that the birds have no instinct of fear, but that the instinct has no afferent inlet specialized for the reception of the retinal impression made by the human form," and when, he adds, they do through experience acquire fear for man, it is because the afferent approach to the instinct has been widened. In such an ingenious way McDougall upholds the existence of the supposed instinct behind the emotion.

I pass over here the difficulty of understanding how, in the case of man, an instinct can attach itself to an *idea,* or how, if we are told that it is the emotion, and not the instinct, that does so, the emotion can separate itself from the instinct of which it is a part, and wish to show only that everything that McDougall here attempts to explain in terms of instinct can be explained without it. His whole treatment overlooks the fact that the primary emotions, his instincts, are awakened not by a special kind of object but by a general kind of situation, and in so doing overlooks an essential distinction between these general instincts of his and the specialized or pure instincts of animals, as in the insects. Whereas, that is to say, in the latter the instinct is attached to one kind of object or group of sensations, in the former there is no one kind of object, but merely a general situation under which different kinds of object may fall. Thus, fear is attached to any situation that has the general character of threat to existence, anger to any situation that sets up opposition to the animal's activities. This distinction McDougall's treatment does away with, but yet all along is implicitly driven to recognize. Thus, when we have been told that the instinct shows itself in response to one kind of object, and has therefore presumably one afferent inlet corresponding to that object, we find this at once qualified by the statement that an instinct may have several afferent inlets, and that many instincts may be excited by very different objects affecting different senses, prior to all experience of such objects. Thus, fear may be excited by certain special impressions of sight, of smell, and of hearing, as well as by all loud noises (perhaps also by any painful sense-impression). "In some of the more timid creatures," we are told a few pages further on, "it would seem that every unfamiliar sound or sight is capable of exciting it." And again, "it is difficult to discover what objects and impressions were its natural excitants in primitive man." When he comes to discuss pugnacity McDougall explicitly disavows his own definition, since we are told that "it has no specific object or objects the perception of which constitutes the initial stage of the instinctive process." The reason is obvious, as he himself allows in his next sentence, the condition of its excitement being the general situation of obstruction to activity. And what is true of anger is as obviously true of curiosity whose condition of excitement is a general situation having novelty, or that involving threat. The native excitant of the instinct, we are told, would seem to be *any* object similar to, yet perceptibly different from, familiar objects habitually noticed. Here evidently we have got very far from the object that excites one of the pure instincts of the insect. The fact of the matter is, that there seems here to be need to posit an instinct behind the separate discharges of feeling themselves; what we have are simply manifestations of emotion, caused in each separate case by the presented situation. It is not a kind of object that excites an instinct, but any object that comes under a general situation that excites an emotion, and this whether the object is prior to or presupposes experience of it. Thus "any sudden loud noise independently of previous experience of danger or harm associated with such noises" is capable of exciting the instinct, merely because such a noise causes a disturbance to the whole organism, mind and body, and so causes an emotion of fear, the situation of threat being at once there. Here we may speak, if we like, of an instinctive fear, but there is nothing gained by affirming an instinct of flight to which it attaches. Still less is there need to posit an instinct in the case of a manifestation of fear resulting from experience, that is to say, where an association has been set up in the animal's mind between a harmful thing and something connected with it on a former occasion. McDougall's elaborate attempt to show how the afferent inlet of his instinct is widened through experience is simply an application of the well known principle that it is through association, in implicit or explicit form, that the life of emotion is extended in scope, specialized, and takes on new complex forms. Thus, in explaining how birds, unaccustomed to man's presence, learn, through the experience of *some* of them being shot at, to fear man, McDougall tells us that the visual presentation of the human form repeatedly accompanies the excitement of the instinct of fear by the sound of a gun, and so acquires the power of exciting directly the reactions characteristic of this instinct, rather than indirectly by way of the reproduction of the idea of the sound. What is this but a statement of that kind of learning through experience which Stout calls "acquirement of meaning," or, in his later terminology, "reproduced meaning"? That is to say, what takes place here is that the sight of the man directly reproduces through implicit association the total disposition excited by the first experience, and so awakens the centres of fear. So it is always, when new objects come to awaken emotion through experience: the general situation exciting the emotion has come to be connected by implicit or explicit association (explicit often in the case of man, of course, especially with ideal emotion) with a new object. So emotion spreads over a wider and wider field, but it is always emotion in its own right, *i.e.,* not attached to an instinct, and hence, too, the infinite shades of quality in the same emotion resulting from the idea of complex of ideas involved in it. If, then, we consider the emotions as existing in their own right in this way, we are no longer confronted with the problem of how an instinct can, as it were, stretch itself to accommodate a greater multitude of objects.

Dr. McDougall in his later book, "The Outline of Psychology," qualms perhaps having come over him in the interval between his books about dissociating the abstract element of feeling from a problematical instinct to which it belongs, in particular, the problem having constantly come up whether to treat the impulse concomitant as belonging to the instinct itself or to its emotion, tells us that there are two possible and legitimate ways of defining emotion, one, his own method in the social psychology, the other, that of defining the emotion as the whole concrete state of the moment, including cognitive, feeling and conative elements, which, of course, was always the way of defining emotion before McDougall came along with his new way of definition. But here is the point. If we now define the primary emotions in this way, what becomes of the instinct to which they are supposed to attach? Evidently, the emotion now swallows up the cognitive and the conative aspects of the instinct, and we have nothing left but a bare something itself, a "stupid, senseless somewhat." Or, is it not rather that the instinct is no longer so much as that, since it is nothing but the emotion. It is quite obvious that the impulse now belongs to the emotion, and cannot belong to some instinct distinct from the emotion. What difference, we must ask, is there between McDougall's instinct and the emotions of anger, fear, and so on as defined by the older psychologists like Sully and Ribot? It is in vain to fall back on a disposition behind the emotion, because that disposition will explain nothing that the emotion itself will not explain. It is not permissible here to fall back upon the distinction between structure and function, because we have no right to speak of structure except in terms of experience. We cannot understand the functioning of memory without calling in structure, because the simplest facts of memory involve past experience "stored away." Similarly, in the region of feeling, we cannot speak of sentiment except in terms of structure, but it is obviously quite otherwise with the primary emotions: we can completely understand the functioning of these without calling in experience. An animal feels fear whenever anything seems to threaten it, anger when anything obstructs it: what can be more easily understood in itself than this? It would be a strange organism, we might rather assert, that did not so respond. Indeed, what we should rather do is to fall back upon experience when we wish to account for such responses not being made. Thus, we are told, alone of animal organisms of any degree of complexity, the hedgehog and the skunk never evince any manifestation of fear, and this evidently because experience has taught them that they are so protected by nature that fear is unnecessary. It will be objected that it is, of course, racial experience that we must fall back upon in the case of the instincts. This is certainly true in the case of the specialized instincts of the insect, but there is no possible need for calling this into account for the primary emotions of fear, anger, and the like. Suppose an animal introduced, impossible no doubt, without ancestors into an environment, that is, with no hereditary factors within its organism, would not such an animal display fear on the first appearance of danger to it? There is evidently more need, indeed, to call in heredity to account for those innate capacities peculiar to the individual which we sometimes call instincts, such as an instinct for music, etc.

The fact seems to be, that there are no such general instincts beyond the separate discharges of the emotion, that is to say, there is no instinct of pugnacity other than what is seen in the separate outbursts of anger, no instinct of flight other than displayed in different manifestations of fear. Everyone must have noticed what difficulty the social psychologists have with their terminology here: they never know whether to speak of fear or flight when they speak of this instinct, and find it very difficult sometimes, as in the case of curiosity, to find two words, one for the instinct and another for the emotion. But the real harm here is the constant ascribing of powers of mischief in the world to entities that do not exist. I do not speak here of the "herd instinct" of Trotter with its multiple functions—surely it is involved in the very meaning of instinct that it has one function, since we know it only through one activity—or to the protean sex-instinct of the psycho-analyst, which is indeed in more senses than one capable of anything, but of the wrongness of attributing, for example, anger among men and nations to an instinct of pugnacity, which is to wait, storing up, as it were, its energy, for a chance to explode in anger, storing up the more of this the longer it waits. Thus, as is well known, it has been a favourite argument for the impossibility of restraining mankind from war for a lengthy period, that the instinct of pugnacity must have its way. A recent writer in the *Contemporary Review,* in showing the error of this, points out that it is here assumed that an instinct is a constantly active process that keeps accumulating energy which must every now and then be discharged in a certain specific way. This is true, he asserts, of one class of instincts—he means the appetites—but these other instincts, *"the activity of which depends upon the presence of some object,"* and the combative instinct is one of them, are *"not normally active unless provoked."* This is true, but the writer does not proceed to the inevitable conclusion that these so-called instincts do not exist except in manifestations of emotion. Anyone who has read carefully the account given by the social writers of the part played by this instinct in human society, will be struck by the fact that all the phenomena said to be its manifestations can equally well be explained without it. Take for example, Dr. McDougall's account of the part played by pugnacity. Modern Europe is an armed camp because of the instinct of pugnacity among the nations. Is not this absurd? May we not explain this "armed camp" in terms of national ambition, rivalry, and recurrent threats of fear? The tribes of central Borneo, we are told, live in a constant state of warfare between village and village, tribe and tribe, a state of strife wholly due to the instinct of pugnacity; yet these people are "very sociable and kindly to one another within each village community." Why, then, does not this so strong instinct of pugnacity find vent in the breaking of wives' and neighbours' heads? It is apparently because there is no instinct of pugnacity there, and this constant warfare between tribes is simply a bad habit arising from ancient rivalries. The reason was given by the intelligent chief who, when asked why he did not give up this senseless practice, answered that, if he did so his neighbours would not respect him and his people, and would fall upon them and exterminate them. It does not appear that anything can be explained in terms of pugnacity that is not otherwise explainable. A striking example of the failure of pugnacity to play the part expected of it in animal life, is given by the article mentioned. Hudson, the famous naturalist and writer, tells us how he expected to see, from the dogs muzzled during the war, a great outbreaking of the instinct of pugnacity during the first few months after their unmuzzling, the idea being that the energy of that instinct must have been stored up during that period; but no such outbreak occurred, and after years he is still awaiting this outbreak from dogs that have apparently lost this instinct. It is probable that what the dogs have, through disuse, lost is merely a bad habit of quarreling on the least provocation. Years of enforced contemplation have shown them that it is not worth the candle. Does not this, indeed, give us a hint as to the abolishing of war? All that needs to be done is to muzzle certain people: the trouble begins only when we ask whom we ought to muzzle.

We have been concerned in this article with a criticism of McDougall's account of the relation of instinct and emotion, but if we turn to other writers on instinct, we find ourselves in little better case as regards enlightenment. Shand alone, in his "Foundations of Character," solves the difficulty by asserting that what we have in anger, fear, and the rest, are not instincts but emotions, or rather emotional systems, since with him the emotion is the conscious part of the emotional system. Shand's emotional systems are therefore McDougall's instincts. But Shand proceeds to confound us by adding that these emotional systems contain within them instincts, as the unconscious part, or an important leaven in the unconscious part, of the whole system. Thus, the emotional system of fear contains within it a number of instincts, the impulse of flight, of concealment, of motionlessness, etc. These instincts are, however, according to McDougall, merely "motor mechanisms," not instincts. And, indeed, it is hard to see how we can give the name of instinct to these impulses, since the emotional system behind them uses now one, now another, of them, or even more than one on the same occasion, to meet the demands of its own ends. Surely they are the means, varying according to circumstances—we can never be sure whether some animals will choose flight or concealment—by which the general impulse of the emotion—in this case the impulse to escape—finds satisfaction. It is noteworthy in this connection that McDougall in his "Outline" no longer speaks of the instinct of flight, but of the instinct of escape, recognizing that the general impulse may take the form now of one motor mechanism, as of flight, now of another, as of concealment. It is a pity that he does not take the further step of recognizing that these motor mechanisms are the means, not of an instinct of escape, but of an emotion of fear. Woodworth and others try to solve the difficulty of the relation between instinct and emotion by asserting that we have emotion in so far as the response to a situation is internal, instinct when it is outwardly directed: instinct is directed towards the end reaction, while emotion is preparatory reaction. But this seems like an ingenious attempt to make two things out of one. Why in the whole complex process should there be two forces at work, why should the impulse of the instinct thrust its way through the feeling of the emotion? Why is the emotion not capable of playing the double part of feeling and impulse? We are in no better case when we come to those who distinguish instinct and emotion by asserting that emotion arises only through the obstruction or the arrest of the instinct, that anger, for example, arises only when the impulse of pugnacity is obstructed or arrested. This certainly makes a difference between the two, but does it not do violence to the facts in making the impulse of the supposed instinct *precede* the feeling? According to this theory, I must always have the impulse to escape or to strike before I can feel the emotion of fear or anger. As far as my own experience goes, this is certainly contrary to the fact: I have no impulse to escape until I have first, at least incipient fear, and certainly no impulse of combat until I am angry. The impulse thus belongs to the emotion and not to the instinct. It is surely carrying reactionism too far to ask us to believe that the situation calls up immediately the impulse to escape without some centrally initiated feeling, some primary mental excitement intermediate between the two. It is in this primary mental excitement that I find the essential of the emotion. Indeed, if Cannon is right in his assertion that the inner organic changes are much the same in the emotions of anger and fear, where are we to look for the difference between them except in the central feeling immediately aroused? I know that Woodworth and others say that for most people the emotion of fear means primarily the impulse to flee and, only secondarily, the feeling of fear. If this is so, I must be content to be among the few who cannot understand what emotion is unless the feeling comes first. It is probable that this account of the matter arises partly from that confusion of emotion and appetite that we find in the majority of instinct psychologists.

This brings us back to McDougall and another defect in his theory of instinct, namely, his treatment of appetite. In McDougall the all-devouring instinct swallows up, not only the primary emotions, but the appetites also. The appetites of sex, hunger and thirst become at once instincts, not different in essence from escape, pugnacity, curiosity, etc. He refuses, that is to say, to recognize a separate class of appetites, except, indeed, to allow in one place that they may be considered as forming a sub-class of the instincts. For McDougall all instincts have their characteristic impulse or appetites, the two things being identical, the special appetites being simply the impulses of the instincts of sex, hunger and thirst. The difference formerly made by psychology between appetite and emotion, therefore practically disappears with McDougall: he speaks, for example, of the emotion of lust, and, I suppose, would not object to speak with Woodworth of the emotion of hunger. But the older psychologists distinguished an appetite from an emotion in three ways: (i.) by the predominance of the conative element (the impulse) within it, (ii.) by its being conditioned by a state of the organism, whereas an emotion is normally dependent on an external cause, (iii.) by its periodicity. In this distinction the older psychology seems to be right: the first two differences (the third may be looked upon as dependent upon the second) are essential differences, and cannot (with Shand) be regarded as unimportant. Sully is unquestionably right in defining an appetite as a periodic, organically-conditioned *craving.* It is not a mere theoretical distinction to classify an appetite as a conative process because of the predominance of the impulse element in it: it is the impulse element in the appetite, directly arising from a state of the organism, that gives the very core of the psychosis: here the impulse element is not only stronger than the feeling, but comes first, the feeling element arising in and through it; while in the primary emotions of anger and fear the feeling element is strongest and comes first, the impulse following upon the feeling. Indeed, when we come to analyse the matter, what a difference appears between the massive urge of an appetite like sex and the impulse element in the emotion of anger, or (still more glaringly) of curiosity, disgust, or self-elation. The second difference, that the appetite arises through a state of the organism itself and not, like an emotion, from an external cause, is of great biological and even ethical significance and therefore, one would suppose, psychological significance also. It is through the neglect of this distinction in classifying the appetites at once as instincts, that the error, to which reference has already been made in this article, has arisen of attributing to the so-called instinct of pugnacity stored-up energy that must have its vent, the more explosive the longer stored. This is obviously true of the appetites, since they depend on a state of the organism, but is just as obviously not true of the primary emotions. McDougall, in his "Outline of Psychology" (lamely, as it seems to the present writer) strives to show that this distinction is not valid, because, even in the so-called appetites, the impulse, as in the case of the sex activities of certain animals, is seen to wait upon an external cause. It is true that sometimes the impulse is not set going except on the occasion of some sense-experience, but here it is evident that it is not the external object that is the source of the impulse, which comes from the organism, but only at the best the exciting cause. Thus, in man, a well-set table may excite an impulse of hunger, but only if the state of the organism is such as to generate hunger, otherwise, it may excite merely nausea or biliousness. But how different with anger, fear and the rest of the primary emotions.

To append the special appetites to the instincts as McDougall does, is surely to overlook the essential part that these appetites play in the maintenance of life, a part that the primary emotions, however important, cannot be said to play; but, for McDougall, the sex-appetite, disappearing with the sex-instinct, is of no more importance for life apparently than pugnacity, flight, or curiosity. Hunger becomes the impulse of the food-getting instinct, but is it not biologically more probable that the so-called food-getting instinct, *i.e.*, the animal's instinctive way of procuring its food, has simply developed from and round the original appetite of hunger—has been determined racially by the animal's configuration and habitat? Similarly, we might conjecture that all the complex activities in which the supposed sex-instinct shows itself, have slowly accreted round the original appetite. It seems legitimate to regard the appetites as prior to the primary emotions, and plausible even to suppose that the primary emotions have developed round the appetites, that in animal life, for example, anger, curiosity, self-elation, self-submission have evolved round the appetite of sex. In many a human life, indeed, do we not see almost the whole of the emotional life consist in a kind of planetary motion of the primary emotions round the appetites? But the mischief does not end here. This refusal of recognition of the appetites as a distinct class from the instincts, is finally seen to be fatal to McDougall's theory of the root-forces of human nature. His whole thesis is that in the instincts, under which come the appetites, we have the root-forces moving nature: from these primary forces the whole life of emotion and desire is ultimately derived: take these away, and "the organism would become incapable of activity of any kind; it would lie inert and motionless like a wonderful clockwork whose mainspring had been removed or a steam engine whose fires had been drawn." Directly or indirectly the instincts are the prime movers of all human activity. What, then, of pleasure and pain that former thinkers had held to be the prime movers of human nature. These, according to Dr. McDougall, are not in themselves springs of action, but serve merely to modify instinctive processes, pleasure tending to sustain and prolong any mode of action, pain to cut it short. They thus play the subordinate part of guiding the instincts in the choice of the means to their own satisfaction. That is to say, in the interests of this all-inclusive theory of instinct, Dr. McDougall is led to deny that pleasure and pain have any direct part to play as movers of human activity, though, how, indeed, they *even* play the part attributed to them, unless there is an original movement towards pleasure, remains a mystery. In his denial of a special place to the appetites in human nature, he has to exclude from his account any reference to that most obvious fact of human nature, that it moves appetitively towards pleasure (and away from pain) as the plant turns towards the sun. Dr. McDougall thus denies that general appetite towards pleasure without which it is impossible to explain human nature, and that because his all-inclusive theory of instinct, involving as it does his hormic theory of action, namely, that impulse always comes first and feeling last, does not permit him to allow it. There is no room for appetite outside the instinct—an appetite must appear only as an impulse belonging to an instinct—and to admit a general appetite towards pleasure would be to admit that feeling may come first. Human nature must be a matter of touch and go, controlled, that is to say, by a number of buttons to be pressed: touch one and you get a movement, and only after that, a feeling. Can anything be more absurd than this? Nothing can be weaker than Dr. McDougall's attempt in the "Outline of Psychology" to deny, in developing his hormic theory and in his anxiety to rebut psychological hedonism, any direct part played by the appetite towards pleasure. He then utterly fails to show that we never move directly towards pleasure, and of course must do so. But to assert a general appetite towards pleasure is not to assert that the only object of desire is pleasure, which is what psychological hedonism says, a doctrine that seems to have arisen in the days of a loose psychology which did not differentiate desire and appetite. A *blind* movement towards pleasure is a fact without which it is impossible to explain human nature, and here alone is it true that "pleasure and pain are man's sovereign masters." The truth, then, is that in the endeavour to explain our nature in terms of root-forces, we must include not only McDougall's instincts (the primary emotions) but the appetites, general and special, and it is in the interplay of these forces that we shall find, as Dr. Drever has well pointed out, the basal facts of our nature. In its fundamental form, showing itself in the appetite towards sense-pleasure, this general appetite becomes not only the source of our acquired appetites, but, according to the law of selection, it reacts upon the instincts, modifying them, since any instinctive activity that leads to unpleasurable consequences tends to cease. The formation of what Dewey calls interest-dispositions of the appetite order, which result from acquired appetite aroused from the experience of the feeling accompanying the satisfaction of the instincts themselves, is of great importance because of the disrupting effect these may have on human nature, since, as Drever points out, these involve the tendency to attach value to the agreeableness of an experience, while the instincts generate interests that attach to objects themselves. Evidently, the stronger the tendency to attach value to the mere pleasureableness of an experience, the more does this come to control the ends sought by human nature. Thus does the "craving for pleasure" increase by what it feeds on, and that this is a peril of our times and of all advanced civilizations, needs no emphasis.

The question arises whether there is in our nature any other general appetite besides the appetite for pleasure that acts as a fundamental root-force and serves, like the appetite for pleasure, to modify the life of the instincts. I offer the suggestion that there is another general appetite which, obvious as it is, has, because of its close association with the general appetite for pleasure itself, been apparently overlooked by psychologists; I mean the appetite for excitement. The "love of excitement" is a phrase constantly upon our lips, but here, as often, popular language is not exact enough, and for "love" should be substituted "appetite." The craving for excitement has all the characteristics of a true appetite; it is a craving conditioned by the organism, periodic in nature, and seeking its object. And this craving is not to be identified with the craving for pleasure, for, though it normally perhaps follows along the limit of pleasure, and is therefore apt to be disguised under the form of appetite for pleasure, it may find satisfaction of its impulse in pain, or at least in excitement that has a predominance of pain over pleasure. When Dewey tells us that what leads men astray is not pleasure, but the tendency to drink pleasure to the dregs, to lose themselves in pleasure, what can this mean but that there is here a fundamental craving, other than the craving for pleasure, seeking satisfaction? Dewey refers, in this connection, to Hazlitt, who says in one of his essays that the charm of a life of crime is found in the intense excitement accompanying it. It would be surely to juggle, as has often been done, with the word "pleasure" to assert that it is the pleasure of excitement that is here sought: it is the excitement itself. It is obvious, too, that the indulgence of the appetites, special and acquired, is enhanced and complicated by the appetite for excitement. It seems impossible to explain many of the activities of men except in terms of this fundamental appetite of our nature that abhors a tedium as nature is said to abhor a vacuum. It is certainly neither the instincts nor their derivatives, nor the appetite for pleasure, nor any conjunction of these that will wholly explain these activities. Why do men go to face the perils of the South Pole? Are we to say that it is merely from curiosity, or combativeness, or the appetite towards pleasure, or some conjunction of these? Surely these offer an insufficient explanation, and we must call in that more fundamental craving of our nature, the craving for excitement. Drunkenness has, no doubt, many causes, but a chief cause is this appetite for excitement, which inevitably finds a vent through the special and acquired appetites, and along with the appetite for pleasure, gives these their inordinate power over human nature. Who shall say that one chief cause of war has not always been this periodic craving for excitement on the part of the nations, rather than a supposed instinct of pugnacity seeking a vent for its energy? This appetite has marked forms in the excitement of the gaming table and the racecourse, two universal forms of human activity which it is certainly impossible to explain merely in terms of pleasure and the so-called instincts. A large part of the problem of human betterment is the task of drawing off this fundamental driving force into higher or more useful channels. One important test of moral progress is the degree to which men find higher, more rational, vents for this primitive appetite. While our ancestors found their excitement wholly in love, war and the chase, we, if we can never wholly escape these, have at least found nobler means of satisfaction. And it is in vain to hope that human nature can ever be wholly freed from the more primitive excitements, even of the acquired appetites. It is on this rock that too ardent moral and social reformers, with their denials and prohibitions, will always come to grief. Thus, prohibition as a solution of the drink problem, one may confidently assert, will always prove futile, and America must become an object lesson to the world, by which it shall learn the folly of attempting merely to deny human appetite.

It is the general purport of this article, then, to show that in the difficult task of trying to understand human nature, it is better to proceed without use of the word instinct and to substitute the words emotion and appetite. It is certain that we can do all that Shand and McDougall have done without using the word instinct. It is true that there are certain so-called instincts less important in the constitution of human nature, but much spoken of in the pages of social writers and educationists, that cannot be resolved into emotion without, at least, doing some violence to that term. But these so-called instincts can none the less all be resolved away, and the activities supposed to proceed from them explained as easily without them. Thus, as regards the instincts of play and imitation, even McDougall allows that to attribute the activities concerned in each case to an instinct behind them, is to be guilty of the faculty error: to attribute the activities of play, for example, to an instinct of play is to explain nothing. As for the two instincts of construction and acquisitiveness, these will illustrate the confusions that beset the term instinct. We find McDougall grouping under the one instinct of construction the insect activities of web-weaving and hive-building and the child's desire or love of constructing *something.* But how can these two things be placed under the same category? The spider's instinct is directed to a definite object, the constructing of a web is surely not an instinct of constructiveness in general. How, again, can we place under one instinct of acquisitiveness the insect's heaping up of a particular kind of food for its progeny and the boy's love of putting into his pocket any and every small object that he comes across? The first form of activity in each case is an example of instinct in the true sense, the second form seems capable of explanation without any reference to the word instinct. And, finally, as to that gregarious instinct with which so much play is made by social writers, does it exist? The activities which are said to emanate from it are, of course, very real, and they cannot be said to be the expression of an emotion—McDougall is wrong, surely, in asserting that the emotion belonging to the gregarious instinct is loneliness, since the activities concerned take shape in part as aversion from loneliness, not as its expression—but it would take very little courage on the part of anyone to attempt to show that all the activities of the so-called instinct can be explained in terms of other factors. In the animals, the need of protection and assistance *plus* habit seem to be the chief factors present in generating gregariousness; in man, aversion from loneliness, the natural pleasure got in converse with his fellows, emulation, ambition, greed and the appetites are all factors leading to his congregating in the cities of the world and turning his back upon the waste places.

NOTES BY THE WAY.

No. I.

BEAUTY AND GOODNESS.

"The perception of Beauty and the awe and the stirring of passion towards it are for those already in some degree knowing and awakened; but the Good, as possessed long since and setting up a natural tendency, is inherently present to even those asleep and brings them no wonder when some day they see it, since it is no occasional reminiscence but is always with them though in their drowse they are not aware of it; the love of Beauty on the contrary sets up pain when it appears, for those that have seen it must pursue. This love of Beauty then is later than the love of Good, and comes with a more sophisticated understanding; hence we know that Beauty is secondary: the more primal appetition, not patent to sense, our movement towards our good, gives witness that the Good is the earlier, the prior. . . The One precedes both, and that in the Supreme also, the Good has no need of the Beautiful, while the Beautiful does need the Good. The Good is gentle and friendly and tender, and we have it present when we but will. Beauty is all violence and stupefaction: its pleasure is spoiled with pain and it even draws the thoughtless away from the Good as some attraction will draw the child from the father's side."—From Stephen MacKenna's "Plotinus: The Divine Mind." Passage cited by A.E. in *The Irish Statesman*, October 16, 1926.

SOME DIFFICULTIES OF THE SOCIAL SCIENCES.

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The plain man, setting out to know his world, encounters many bewilderments. The greater part of them, no doubt, are due to the complexity of his environment, and to the real difficulty of analysing it without destroying his sense of wholeness. But, apart from this, the plain man is more bewildered than he need be by the disputes of those who profess to set this environment of his in order for him. For example, we are using the words "science" and "scientific" increasingly, but by no means unanimously. There is, in fact, hot debate about what should be called a science. Even within the realm of the social sciences, to which this journal is devoted, there is not a little confusion in this regard. Textbooks and dictionaries, with commendable caution, leave their definitions spacious. Here are some examples: "Science is a knowledge of principles and causes." "Science is the arrangement of facts in relation to one another." "Science is systematized knowledge of any kind." But spaciousness has difficulties of its own. Definitions are apt to become so wide as to be vague. Well aware of this, Samuel Butler described definitions as "a kind of scratching, which leaves a sore place more sore than it was before."

If, however, we turn from this business of definition in order to ask the concrete question: "What are the sciences?" We find, not abstraction but confusion. Some learned men maintain that only the so-called physical sciences can be given this title. By the physical sciences they mean mathematics, physics, chemistry, geology, and, if you jog their memories, astronomy. The idea seems to exist that these studies, which deal with inorganic things, are somehow more scientific than the sciences which deal with life, such as biology, zoology, botany, physiology and the like. The former are sometimes called the basic sciences. They are regarded as the accurate, ponderable, self-respecting sciences. The others are observational, chancey, hit-or-miss affairs. Even more so is this thought to be the case with those studies which are concerned not only with life, but with humanity. There are some natural scientists who deny that the social sciences—psychology, ethics, jurisprudence, economics, and politics—are sciences at all. They are held to be mere classifications of observations, of tendencies, of hopes, and of hypotheses, quite incapable of verification by experiment.

Of course this attitude has had to be modified. Psychology and biology have been shown to be as susceptible of experimental verification as physics and chemistry. Yet the attitude persists—even in universities. Some professors of physics and chemistry have a lofty disdain of the conclusions reached by their brother scientists in biology and botany, while they are frankly incredulous of the results attained by the psychologists and economists. Even some psychologists deny that economics is a science, because it cannot check its results by experimentation.

Here again, Samuel Butler is worth quotation:

> Why should the biologist, geologist, or other ist give himself such airs over the draper's assistant? Is it because he names his plants or specimens with Latin names, and divides them in genera and species, whereas the draper does not formulate his classifications, or, at any rate, only uses his mother tongue when he does? Yet how like the subdivisions of textile life are to those of the animal and vegetable kingdoms! A few great families—cotton, linen, hempen, silk, mohair, alpaca—into what an infinite variety of genera and species do not these great families subdivide themselves? And does it take less labour, with less intelligence, to master all these and to acquire familiarity with their various habits, habitats, and prices than it does to master the details of any other great branch of science? I do not know. But when I think of the great clothing stores on the one hand, and, say, of the ornithological collections of the British Museum on the other, I feel as though it would take me less trouble to master the second than the first.[1]

In the face of all this the plain man gets more bewildered than ever. "What is science?" and "What is scientific?" he asks. How can he be expected to know when all the professors are disputing about it?

It is one purpose of this paper to suggest a way of escape from this tangle. And the suggestion is that the plain man, following Butler's hint, should transfer his attention from the object studied to the mind which is studying it. In other words, our criterion of "scientific" must be a subjective one. The test of a scientist is the attitude of mind in which he approaches his subject. If he is really disinterested; if he seeks facts in order to form unbiassed, impersonal judgments upon them; if he resolves to follow the facts to what seems to be their logical conclusion, irrespective of how that conclusion affects his cherished ideas, and his material position; then he is scientific. And it does not matter whether his subject is electrons, or earthworms, or ethics.

It would be amusing, if it were not sad, to notice the way in which the adjective "scientific" is claimed for all sorts of policies and ideas, whose sponsors would not survive the test we have proposed. On the one hand, there is that school of scientific management in industry, which sets out to produce greater profits, but stops short when its inquiry suggests a better co-operation of human effort in industry for other and wider purposes than profits. On the other hand, we have "scientific socialists," who conveniently ignore all historical facts which do not support their theory of social evolution.

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[1] "Higgledy Piggledy," page 218.

The plain fact is that people do not want the scientific spirit to be applied to social institutions. They prefer to rely on traditions, emotion, and vested interest. James Harvey Robinson remarks that more real scientific thought is applied to the repair of a broken down motor car in a wayside garage than was brought to the discussion of the League of Nations project in the Senate of the United States. And the root of all this is fear. Men fear for the old institutions, the old creeds, and the old groups, whether they be chambers of commerce or socialist societies. And the fear is not so much a fear of receiving new ideas as a fear of re-examining the old ideas, lest they should prove irrational and untenable to the better part of our minds. When one hears a hot defence of a church, a constitution, an industrial system or a socialist philosophy, it seems to suggest, very often, that the defender is not convinced of the rightness and justice of his ideas, but that he dreads to examine them.

The existence of this temper in the world constitutes perhaps the greatest obstacle to free thought in the social sciences. The disinterested curiosity which seeks truth is constantly hampered by particular interests which desire the authority and the prestige of science for the promotion of their own ends, and, still more, for the suppression of truths and speculations, which seem to threaten a disturbance of those beliefs and institutions that support these interests. Marx put this very succinctly in the preface of the first edition of his *Capital* in 1867:

> In the domain of political economy, free scientific inquiry meets not merely the same enemies as in all other domains. The peculiar nature of the material it deals with, summons, as foes into the field of battle, the most violent, mean, and malignant passions of the human breast—the furies of private interest. The English Established Church, for example, will more readily pardon an attack on thirty-eight of its thirty-nine articles than upon one-thirty-ninth of its income.

This is good amusing stuff, but it is necessary to remember that the boot is on the other foot as well. An acute observer of modern conditions remarks that "the working classes, either as a whole or in sections—*e.g.* the town against the rural labourers, the skilled against the unskilled, the manual against the mental—tend to formulate an economics, each in accord with its own outlook and interest. All these working-class interests assert themselves vigorously in the welter of the current economics of Communism, Socialism, Syndicalism, Guild Socialism, Co-operation, and other working-class Policies."[1]

And this applies not only to economics. Religion, patriotism, and sex all arouse powerful passions which help to confuse the patient truth-seeker. One has only to note the number of people who, although previously showing no trace of disinterested curiosity about the working of the mind, have rushed to the study of psychology since the work of Freud has been made known to the world. They can be found chattering vigorously about psycho-analysis, œdipus complexes, paternal fixations, and narcissism; forming study circles to tell each other their dreams, and opening their hearts to chance acquaintances about the more intimate things of their lives. The taproot of this sudden flowering is plainly not science but sex.

In the case of history, which may not be called a science, but which certainly ought to be scientific, in our sense of the word, the influence of powerful interests is openly avowed. History, it is said, ought to subserve patriotism. This can mean nothing else than that patriotism is more important than truth, an assertion against which all good historians are constantly fighting. Yet "patriotic" history appeals to powerful passions and so it continues to be written. No country is exempt from the charge of doctoring the history which it teaches. England regards Henry V. as a wise, brave, strong king, and the Hundred Years' War against France as an evidence of Gallic greed. Francis Drake is extolled, Roger Bacon is neglected. One of the answers in a catechism for French children, printed in 1806, calls Napoleon "he whom God raised up at a critical time to re-establish the Holy Religion of our fathers." The terrible mischief wrought by the modern German school of patriotic historians needs no comment. And even in the United States we find a textbook gravely avowing that its purpose is to show why Americans are "the bravest men, and the most successful of inventors, authors, explorers, and scientists." One begins to understand why De Tocqueville said, in 1830, that the Americans believed they formed a species apart from the human race; and why a modern Frenchman has remarked that it must be a standing source of mortification to Americans not to be able to pretend that an American discovered America.

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[1] J. A. Hobson: "Free Thought in the Social Sciences," page 78.

Another great difficulty which meets both teachers and learners in the social sciences is the fact that they must use words which are already current in the language. Many of these words have already various meanings and associations. They are like worn coins with the sharpness of their definitive markings smoothed away by constant use. The disadvantage of this is obvious. Words like "intelligence" in psychology, "abstinence" in economics, and "'socialism" in politics are cases in point. Social thinking is forced to be somewhat abstract, but it must employ terms which have been imposed on it by common usage. Gradually there creeps in what has been called "the bias of metaphor." Poetic metaphors are quoted as scientific facts. The physical world is carried over to the moral and psychical world and false analogies about human nature are imported into the discussion, often quite unconsciously. When Shakespeare wrote of "a tide in the affairs of men, which taken at the flood, leads on to fortune," he was describing, in an apt and striking way, something that he had observed happening to many men. But if these lines be quoted as a maxim of statecraft in order to urge a spirited foreign policy upon hesitant Ministers, it means at best that we are taking a curiously fatalistic view of international politics, at worst, that we are urging a policy of unprincipled opportunism. We are told that the present economic system is a stately edifice, built by the wisdom of our fathers, and we must beware how we tamper with its foundations. But the present economic system has been devised (not built) by men and for men. It will last only while it serves men. What are called its foundations have often been changed in the course of social development.

These metaphors are legion. Think of the phrase, "balance of power," which has nearly wrecked Europe on several occasions. It is imported straight from the physical science of mechanics, through common usage, and its complications are that social groups must obey the laws of mechanics. Or take the favourite tree metaphor. The constitution, we are told, changes slowly according to its own internal laws of growth. This is a flagrant mis-statement. Constitutions change by means of external interference. No one objects to such metaphors being used as illustrations. But the mischief is that they are used not as illustrations but as arguments. There has been a perfect deluge of such arguments recently in New South Wales in connection with the proposal to abolish the Upper House. Over and over again, the Labour Premier has been told that he is tampering with the foundations of the State, that he is taking the safety valve from the boiler, that he is laying a thoughtless axe to the roots of the sacred tree whose laws of growth are entirely beyond his ken. If, indeed, it be true that our constitution is subject to the laws which govern inanimate things like buildings and boilers, or even to those which govern the growth of non-human organisms like trees, then we had better agree to abandon radical reform of any kind in society, for it will be hopeless. It is not advisable to suggest that the use of such metaphors should be discontinued. They lend piquancy to our arguments and often make them more intelligible. But it is urgently necessary, especially for our public men, to remember that such metaphors are only illustrations, and that not all the impassioned pleading of politicians can convert them into arguments.

Finally, we ought to consider the most insidious danger of all for the social scientist—the pull of the personal equation. It is often said that we learn only what we desire to learn. It is sometimes forgotten that we learn only what our teachers desire to teach us. The philosopher praises the scientific attitude. He extols the impartial search for truth. He chides the publicist for his interested reasoning. And the psychologist laughs quietly at the philosopher. For the psychologist knows that we cannot free ourselves from the persistent urge of our beliefs and our prepossessions, from the promptings of instincts and interests whose roots lie deep in the very basis of our personalities. In this aspect the philosopher appears to the psychologist as something of a hypocrite. Probably he is right, but the philosopher is not ashamed, for modern psychology has taken the sting from this charge of hypocrisy. Even the most rational and detached philosopher cannot, in his thinking, escape the intervention of personal interests which are, strictly speaking, not rational in their basis. And it is not necessary that these clouding, subverting, interests should be material in the financial sense. Despite the Marxians, it would be much simpler if this were the main danger. For here we have to deal with things much more subtle than economic considerations. It is an entertaining, if somewhat cynical, diversion to observe the play of vested interest in all sorts of spheres which are not economic at all. And they are the more dangerous because the mind which they are influencing is often quite unconscious of their existence.

The mid-nineteenth century parson reacted savagely against Darwinism, not so much because it threatened his financial interests, but because it seemed to him to be a dreadful invitation to go out into the intellectual wilderness. It asked him to jettison all that scheme of special creation to which he had for so long subscribed. And it was in virtue of that subscription that he had taken his place in the society around him. Nowadays, we laugh indulgently at the dilemma of the mid-Victorian clerics. But are the Georgian professors in much better case? *A* is a brilliant student who goes abroad with a scholarship and sits at the feet of the famous Professor *B*. In due time *A* returns, with unimpeachable references and academic titles, to become, in his turn, a professor. He is regarded, and regards himself, as a *protégé* of the famous *B*. But thought has a way of eclipsing thought systems, and presently someone arises to impugn *B's* system. He publishes his conclusions. Do we find that *A* receives them honestly and fairly and with an open mind? Or do we find *A* regarding them with the gravest suspicion before he examines them? Or take Professor *X*, who is a philologist and has spent his life in tracking down verbal forms to their origin. Is the project of reformed spelling likely to receive a fair hearing from him?

There is a vested interest in ideas, and it is just as tenacious, and just as unfair to rival ideas, as the vested interests in private property of a more material kind. Those who find in the socialization of the means of production, distribution and exchange a sure road to the wilderness, have here a tough nut to crack. Such a socialization will not abolish the private propertarian attitude to ideas, and therefore will not banish envy, hatred, and all uncharitableness, as every detached observer of universities and academies well knows.

Back, then, there comes to the plain man the question: "What am I to do?" If, even in universities, there exists this twisting of scientific inquiry by personal vested interests; if the bias of metaphor everywhere poisons the well of truth, is there any value in education at all? There is no reply to this except exhortations to continued watchfulness. Eternal vigilance is the price of liberty from these personal intellectual biases. We may not be able to free ourselves completely from them, but we can at least recognise that they exist and that they ought to be watched. And this is surely worth doing. For if we can preserve an alert willingness to interrogate facts, and to abide by the award of reason; and if, further, we can learn to be humble enough to keep on believing that it is possible for us, ourselves, very often to be wrong; then perhaps there will descend upon us a double portion of the real academic spirit, without which intellectual and scientific progress is impossible.

THE DREAM IN THE LIGHT OF A NEW CONCEPTION OF CONSCIOUSNESS.

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THE subject of dreams may be approached from many angles; my own view is based on a conception of consciousness for which a study of our aborigines appropriately enough gave the first clue, though its subsequent elaboration was grounded on psychiatry in general and that very interesting disease *dementia præcox* in particular. If Madame de Stael was justified in calling a certain type of architecture "frozen music," we might, with justice, borrow her metaphor to call this malady the "frozen dream," since the sufferers live their life in a state of dream-like phantasy, a peculiarity which makes investigation easier than in the brief and evanescent dream itself. In both, dissociation of thought is one of the principal features. The clinical forms of *dementia præcox* are very protean, and have been variously described. In one, there is a curious state of stupor during which the patient is aware of something in his surroundings, but shows no sign of interest, emotion, or knowledge of detail. In another, emotion and excitement fill the picture, whereas in the third, the intellectual faculties run riot in a blaze of bizarre ideas. Furthermore, in all cases there is what might be termed a misfitting of the personality; these faculties do not balance. For example, a patient who considers he is the "King of Austria and Australia," is quite content to peel potatoes and do household chores for his subjects.

If these observations be accepted as correct, it is obvious that they might be explained by supposing that there are involved in normal consciousness three centres, one for simple awareness, a second for emotion and a third for detailed knowledge of environment and self, which can be called the centre of fine adjustment in contradistinction to that for emotion, which is a coarse adjuster.

The motive power underlying consciousness is expressible in terms of a guiding fiction, *the urge to adjust*.

It must be appreciated that this conception, which is here only outlined in skeleton form, and will, I trust, shortly be published in full, differs in essentials from that of any modern school, including the Freudian, and, if substantiated, must profoundly modify their views on the inwardness of dreams.

Since dreams occur during sleep, our first question must be to ask ourselves what sleep is, and, though mankind spends a third of his day in a state of slumber, it will be admitted by most that there is still room for a satisfactory explanation of this commonplace phenomenon. Space will not permit me to say more than that I have made many observations, both from the aspect of health and disease, which point to the fact that sleep is due to the dissociation of the centres of awareness, emotion and fine adjustment. If these are no longer in functional apposition then unconsciousness must inevitably ensue; but it would be too much to expect that dissociation, or re-association, should be always instantaneous and that occasionally the linking up should not be gradual, certain centres being more involved than others.

Such an eventuality would lead to a state of partial consciousness, in which certain elements would predominate and be misplaced, giving a bizarre effect to the fabric of thought. In other words, it would result in a dream-like imagery; and this, in fact, is precisely what we have set out to find, the mechanism of the dream itself, which may be defined as *a state of partial consciousness in which the centres of awareness, emotion and fine adjustment are in incomplete functional apposition*. It is found most frequently in the process of awakening and going to sleep. The guiding principle of the dream life is the same as that of full consciousness, namely, to make adjustment to some end.

Dreams are of three varieties, according to the centre which predominates, and, though each may exist in almost pure form, the majority are frankly composite.

1. THE AWARENESS DREAM.

Most of us have experienced at some time or another a phase, particularly on awaking from sleep, in which we know something strange is happening, but cannot say what it is. Characteristically, the dreamer rubs his eyes and says: "Where am I?" It is knowledge of something there and no more! A consciousness, whose imagery is of the simplest order, comparable to that of a lowly animalcule. It is a type of mental process which takes us back to the dawn of mind, when thought was simple awareness and lacked the energising and directional aid of emotion, or the assistance which detailed knowledge alone can supply. It is one of our psychological links with the past.

The fact that dreams vary so greatly in what might be called vividness, or depth, is largely due to the differing amount of awareness in their composition. If the amount of awareness be slight, then the dream is shadowy and evanescent; if large, then it may be so vivid as to be considered a vision, and may alter a man's whole outlook. This latter contingency, to judge from my experience, occurs not infrequently in epilepsy, and I can recollect one excellent case in which the appearance of the Apostle Paul made a patient forswear cards and the races.

II. THE EMOTIONAL DREAM.

The nightmare is the cleanest cut example of this type, and it is interesting to note that the apparent slowness of movement, as the dreamer is encompassed by some horror, can probably be explained in terms of the types of nerve cell involved in the emotion. Those for pain, heat and cold, which I believe to be of paramount importance in this connection, are slow in action, in order to make their influence felt over a long period.

As with awareness, every gradation is possible and does occur. A considerable proportion of our dreams are primarily of this variety, and any one of the emotions may be involved, from that attendant on the mosquito bite, a change in the tension of an organ, to one purely psychological.

III. THE DETAIL DREAM.

If, instead of jumping out of bed in the morning immediately on awakening, the eyes are kept closed and the mind is allowed to ramble from subject to subject almost without guidance, cerebration of a very high order is possible owing to freedom from waking emotional focus. Even an ordinary man may then have ideas and imagery, things of genius and splendour, which, however, are dulled as soon as the eyes are opened, and which have vanished as a rule by the time the slippers are donned. I have recollections of having read of novelists and inventors who always slept with pencil and paper beneath their pillow, in order not to lose the pearls of wisdom which occasionally came without seeking in the half-awake moments; but it remained for the late Dr. W. H. R. Rivers seriously to suggest the use of this state for purposes of scientific thought, and it is one which I, personally, employ very frequently when engaged on a difficult problem. The

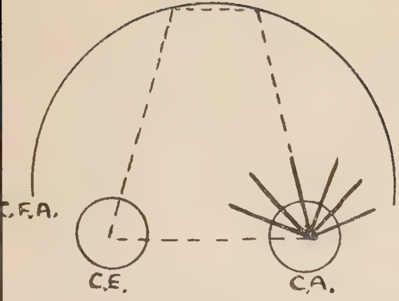
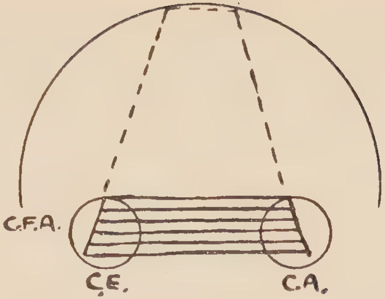


Figure 1.



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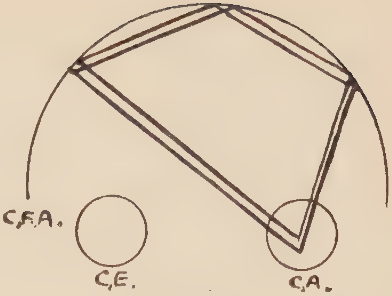

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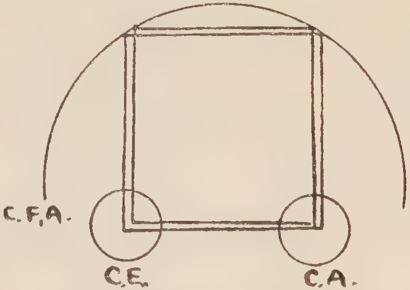

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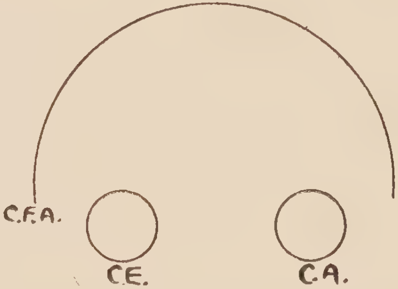

Figure 5.

DIAGRAMS TO ILLUSTRATE THE PATHWAYS OF NEURAL ENERGY IN FULL CONSCIOUSNESS, SLEEP AND DREAMS.

C.E. = centre of emotion; C.A. = centre of awareness; C.F.A. = centre of fine adjustment.

Fig. 1 = full consciousness; Fig. 2 = sleep; Fig. 3 = an awareness dream; Fig. 4 = an emotional dream; Fig. 5 = a detail dream.

NOTE.—The centres of emotion and awareness are situated in the optic thalamus, that for fine adjustment is in the cerebral cortex which, as it envelops the former, is depicted as a semicircle. For purposes of convenience one only of each structure is shown; it will be remembered that the brain is bi-lateral.

similarity between this condition and those of day dreams, phantasies, the hypnoidal states of Boris Sidis, certain phases of hypnosis characterised by intellectual brilliance (as shown by making calculations impossible to the waking existence), will be suggested to the informed observer. The resemblance is so close as to make their essential oneness seem to be a certainty. The underlying mechanism consists in the fact that, whereas in waking life our ideas are harnessed to emotion and can travel only along a well-defined roadway, if the traces be cut and the harness removed, every sort of superficial association in similarity, shape, size, appearance *et cetera,* become tremendously important to the intellectual steed which travels far afield, discovering new ground and pasture at every stride. It achieves the impossible by annihilating distance, jumps precipices, swims torrents in the twinkling of an eye as in the approved manner of dreams, and does so because emotion, being either absent or misplaced, does not guide it along the straight and narrow path which custom has made habitual. A chasm is as a pavement to a man who has lost all sense of fear, and your timorous mortal who is afraid to ascend a ladder, can experience pleasure in soaring aloft on a broomstick, if he has forgotten what it is to be frightened!

Let us take a concrete instance. If I were asked to allow my stream of conscious activity to respond to the stimulus word, *mind,* it would probably come under the influence of my prevailing interest or emotion, which at the moment concerns matters psychiatric so that the next association is *consciousness,* and leads to some problem in my speciality. In other words, the stream of ideas is not free, but travels within definite well-defined channels, but if I could rid myself of this particular emotional interest, it is quite likely that the word would suggest *mined,* and I would see an explosion with the *débris* falling about my head.

Or, again, the stimulus word, *halt,* arouses a war emotion, and I see before me a sentry in uniform. Were it not for this, I might with equal ease have thought of the clang word, *holt,* and passed thence to the face of an old friend of the same name, a man with whom I have no war connexion.

It is noteworthy that children appreciate the dream-like manner of thought, so that their comic-papers are full of manifest absurdities. Horses speak good English, fish walk through the streets on their tails, and there are a dozen miracles on every page. The reason is that they are the creatures of impulse and have not integrated their emotions. When they are a little older, the horse will become part of the racing and betting sentiment and the comic-paper will be replaced by a race-card; the proper place for fish will be in the frying pan, and there will be little time for considering their being in other places.

Children, in growing up, will have learned much, but, thanks largely to the fettering effect of their matured and integrated emotions, they will have lost that glorious diversity of interest, elasticity of mind and faculty of being moulded which is the prerogative of youth. No longer will the simple graphic representation of a horse and a fish in variegated colours on a piece of paper give them satisfaction, they must experience the roar of the multitude as the horses flash by the post and have a bet on the result, or actually smell their fish as it lies on a plate ornamented with parsley and garnished with sauce. In other words, where once vision alone sufficed, later it fails to do so. All of this, rightly taken, is germane to the question of dreams.

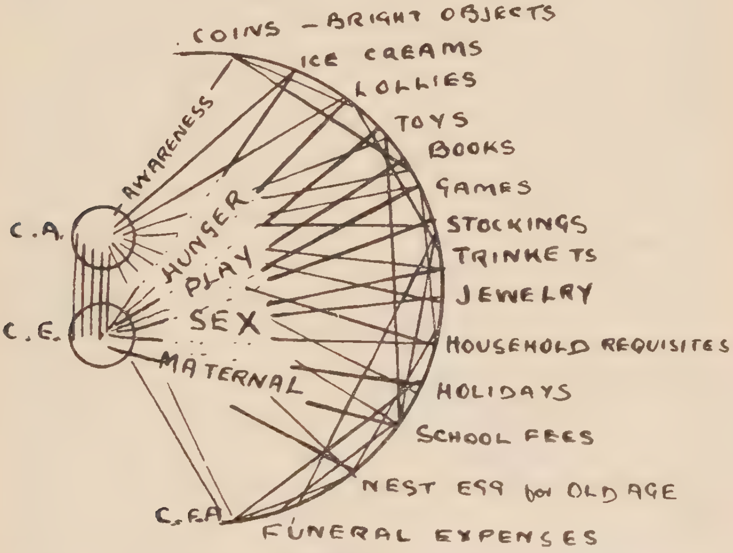

Figure 6.

DIAGRAM TO ILLUSTRATE THE GROWTH (INTEGRATION) OF THE SETS OF IDEAS CONCERNING MONEY.

C.A. = centre of awareness; C.E. = centre of emotion; C.F.A. = centre of fine adjustment.

NOTE.—This diagram not only illustrates the relation of emotion to the *money* set of ideas, but it also shows graphically the extraordinarily large number of neural dispositions which must be present: the above is, of course, but a minute fraction compared with the whole. It is inconceivable that each set of ideas with its symbols is separate, for example, that such a symbol as *cream* in ice-cream has not a very close neural connection with that for *cream* in face-cream, otherwise learning would be much more difficult than it is. For example, one could not remember an object by thinking of another, as is done so universally.

To grow up, in the psychological sense, means largely the learning of values. A few months ago my small daughter was given a two-shilling piece. She kept it in her purse until one day, being without small change, I borrowed it and gave her eighteen pence in return. She was then, delighted at my generosity, but today will realise that she is being deprived of two potential ice creams, while a few years hence a similar monetary loss will mean the deprivation of a portion of the wherewithal to purchase silk stockings, and later on still, it may entail suffering to her children. In each stage the effect of her emotion is all important. At first there is mere acquisition, then hunger, later vanity and sex, finally mother love: the destination of her money will vary according to the coarse adjustment involved (see Figure 6).

The point I would stress is, that emotion is the great focusser of our stream of consciousness; alter it, or take it away, and the rays will scatter in all directions, so that the picture is entirely changed. This is rather a different conception to that of Professor Wm. McDougall, who regards instinct as the mainspring of our activities, and emotion as something associated with it. Such a view places the cart before the horse and is really no explanation, since, in spite of many learned definitions, the true inwardness of instinct is still a mystery. The very multiplicity of the attempts which have been made to define it and the ever-changing category of instincts which are produced by exponents of the Instinct School, are, to my mind, proof, not of approaching success, but of realisation that their fundamental conception is wrong and will have to be altered.

Of the following hitherto unpublished dreams, the first is chosen because it shows a definite stimulus awakening consciousness into activity, so that the symbolism and elaboration can be analysed with accuracy. There can be no need to rake in the dim and misty past for an explanation of such a self-evident occurrence as that of a full bladder. This clearness of origin is far from being true of many dreams recorded in the orthodox Freudian manner, which therefore lose much of their value. To continue the analysis for months and years, as is frequent with this school, is an excellent intellectual exercise, but the side tracks or "red herrings" (to borrow an expression which, if my memory serves me aright, was used by Dr. Mapother in the same connection), are so numerous that it is highly questionable whether there is anything tangible at the end of the analysis.

The whole secret of the dream lies in recency, and the manifest content is all important. Analysis should actually commence before the dream is finished, that is, before full consciousness returns; it is usually completed in time for discussion at the breakfast table, should the subject bear repetition. Unfortunately, the very intimate details of dreams forbid publicity. This is regrettable, since it entails silence about matters of scientific importance. It is essential that the dreamer, immediately on arising from his bed, should write his dream. This was done in the case of the *mined* dream, now to be related, together with the associations of the half-awake state. They have been untouched since, except that, for clearness, the matter has been arranged in diagrammatic form. This is self explanatory, and shows that the bizarre imagery of the dream can be explained as a product of known modes of associating ideas. The same explanation holds for all dreams, the symbolism being, not fixed, but varying with the individual and his wealth of symbols. He can use only those symbols which he has himself collected, and they are usually no more than a day old.

THE MINED DREAM.

The dreamer, in the company of a friend, is fording a stream. The friend goes ahead and tells the dreamer to stop as he must set a mine. Whilst this is being done the dreamer rushes to safety, makes his way through a barbed-wire fence and, finally, finding some trees, hides himself behind them. Meanwhile, in the doing of this, he has seen a woman driving some horses. He imperiously tells her to stop, as a little ahead there is a mine. This she does, and thanks him for the information. Looking over his shoulder, he sees that the man who has made the mine, has lit the fuse, but is slipping on a rock. The dreamer feels frightened lest he should be too tardy and become caught in the explosion. After he has travelled a few yards the explosion occurs, and the dreamer awakes with the image of the stones and *débris* tumbling about his vantage point amidst the trees.

The following questions were then asked, whilst the dreamer was still half awake, and immediately the answers leaped into consciousness without, be it added, any searching for possible associated ideas of names or faces.

What was the name of the friend? *Mr. Holt.* What does his name suggest? *Halt.* What idea is associated with *mine?* The answer was *mind,* in the sense of "taking care."

Had these replies been elicited only after long use of a dictionary and much conscious thought, one might have been accused for manufacturing artefacts, or, at least, of stretching the limits of probability in order to bolster up the argument; but the natural manner in which they appeared goes far to combat any such possibility. "Set a thief to catch a thief" is a sound principle which when applied to dreams would read, *set a half-dream to interpret a whole dream.*

AN ANALYSIS OF THE IMAGERY OF THE "MINED" DREAM.

The Micturition set of ideas.		Associated ideas and feelings mainly independent of micturition for their relationship.		
Stimulus which sets in train the synthesis of consciousness from its elements: Awareness, Emotion, and Fine Adjustment.	Primary Association.	Alternative word of same meaning.	Word expressing different meaning but having same sound or similar sound.	Ideas in normal succession.
Feeling of bladder fulness and need to micturate.	Water. Stream.	River	....	Fording. Slippery rocks.
	Micturition.	....	....	Horses stop to micturate.
	Obstruction.	....	....	Barbed-wire fence.
	Warning.	....	....	Thanks given for receipt.
	Mind (take care).	....	Mined	Rocks, fuse, explosion, *débris*.
	Stop.	Halt	Mr. Holt..	
	Take shelter. Take shelter from woman.	....	....	Behind tree.
	Danger of delay. Anxiety.	....	....	Fright.

I trust that I shall not be accused of ill taste in bringing into the limelight a bodily function which the civilised man conspires to ignore in public. The discussion is useful because it will remind the reader that sex is by no means the only emotion involved in the causation of dreams; it is necessary because, as I have already stated, one finds it so essential to be able to discuss a dream in which the causal factor is obvious. The range of the unknown is reduced, and we are given a definite structure on which to base the analysis.

Let us in waking consciousness place ourselves in the position of the dreamer in his predicament. It will be obvious that his rather unpleasant emotion might suggest practically all the alternatives mentioned in the second column. It is to be noted, however, that, whereas in waking thought activity is kept in a well-defined groove and smoothly adjusted until the goal is reached, in the emotional inco-ordination of the instant before full consciousness the dispositions, owing to the diversions already described, both lead in a zig-zag fashion instead of in a straight path and are also disguised.

THE BICYCLE DREAM.

It may be said that by taking as model a type which Freud calls the convenience dream, I have begged the question and ignored the latent content. Freud seeks in this latent content a deep meaning involving "some wish of the unconscious," and the late Doctor Rivers sees in it "steps in the solution of some problem." Now, while it is true that some dreams are more complicated than the simple *mined* dream, in my opinion, the application of exactly the same principles will result in their truthful interpretation. The following example is a case in point:

> I have the opportunity of taking a motor cycle which is standing outside a shop. I decide that it would be unsafe. I am invited to ride on another motor cycle and side-car; I cannot see the driver, but recognise his back as belonging to one Dr. Love. Mr. Will Read is in the side-car. I take the cycle back to the shop, though I feel that I am delaying them. Returning, I apologise and mount their machine, which then starts on its way.

This dream occurred on Christmas night, and an analysis of the doings of the previous day made it clear that there had been three definite and distinct trains of thought involved in its production.

1. Regret that owing to the handicap of distance it was impossible for our family to have a reunion, and the resolve to return to Europe some time in the future.

2. Discussion whether it would be feasible to incorporate in this article a critical review of dream literature, instead of relying on a construction of my own views. Such a course would necessitate reading afresh the authorities, and would entail regrettable delay; against it also is the fact that my space is limited.

3. Discussion with a friend as to the purchase of an automobile. At the same time I remember noticing a motor cycle and side-car standing by the road. My attention was called to it by the fact of it having been there some days previously.

If these sets of ideas be examined, it will be noticed that, though they represent a wealth of associations (it need hardly be mentioned that an idea is not an entity comparable to a pea in a bottle, but is the final product of complicated neural dispositions), they bear to each other a certain resemblance of a superficial nature. This is conveniently shown below.

Home Associations.	Dream Literature Associations.	Motor Associations.
Dr. Love, an old college friend.	Professor Lovell, an authority on dreams, to whom this article should be sent.	Dr. Love, when last seen, had purchased a car.
Mr. Will Read, a very old friend of the family.	Will read (the verb).	Mr. Will Read is an ardent motor cyclist, and we have often ridden together.
Regret at inability to travel to Europe.	Regret at any necessity to disappoint the editor, should delay in sending MSS. occur.	Regret at inadvisability of purchasing car and so travel.

There are here three distinct and widely differing sets of ideas, which cannot at the same time come into consciousness because, like every other function of the body (*e.g.* the percentage of gases and salts in the blood, *et cetera*), the amount of neural functioning is fixed automatically at a constant level. This I have termed the *neural energy constant.* The conception has much practical application in a discussion of the psychological levels, *et cetera.* But for the *neural energy constant,* thought would be haphazard.

At the same time, through using these trains of thought during the previous day, I have conditioned a series of associated neural dispositions, and their associations are the expression of different meaning through the same or similar sound (clang association), or the expression of contiguity in time or place.

What is more likely, therefore, than that the neural energy will travel along a pathway which has been already thrice conditioned? And as, at the instant of awakening, the appropriate emotion of none of the three sets of ideas is in alignment, the imagery will be taken from all, at their point of contact.

Thus, in the above dream, my life-long friend, William Read, and his side-car, appear because he is connected with my home life and because, at the same time, his name expresses a solution of the dream-literature problem, whilst his cycle fits in with the motor-purchase scheme. The connections of the word love are similar. Regret, another common feature, is illustrated by the facial appearance of my friend, which seemed to show noticeable lack of pleasure at seeing me, a fact which, at the time, struck me as being peculiar in view of our very cordial friendship. Furthermore, the steps in the dream, when interpreted, demonstrate stages in the solution of each problem. The process is comparable to the sight of the matrices in a linotype machine, which drop automatically into their proper channels. To the uninitiated, their manner of so doing is miraculous, but when the details of the mechanism are grasped, it would seem miraculous if they failed to fall into their proper compartment. In the same manner our psychological symbols are pigeon-holed according to similarity and succession, some of the same neural elements being employed in each. For example, there will be a very close connexion between mind, mined, mine, Holt, halt, and Will Read (name and verb) or in the examples given by Freud, Amyl, Propyl, Propylaea, Nature, *et cetera.*

Once the normal stream of thought is disturbed, as it is when the guiding emotion is not correctly associated, then these alternative symbols appear. It is the apparent, though not actual, irrelevancy which gives grotesqueness to the imagery. It is to this irrelevancy that one must ascribe the phenomena which have been described so ably by Professor Sigmund Freud and others, namely, dramatisation, pantomime effect, condensation, steps in the solution of a problem, and wish-fulfilment. Examples of these are shown in the two dreams analysed above.

Many dreams are easier to interpret than those already given, and any dreamer's repertoire will show examples. The following are illustrative.

THE TRAIN DREAM.

I am in an open wagon of a *train*, accompanied by my daughter. She takes her hand from mine, and I do not grasp it again, though I perceive that there is danger for her in a moving wagon without sides. She falls from the train and is discovered to be injured. I ruminate to the effect that it is I who have been too late.

On the previous evening I had discussed the *training* of children, on account of the rather serious misdemeanour of one of my patients. My theme had been, that all correction must be immediate, that to delay is fatal.

THE TRESPASS DREAM.

One of my patients at the clinic, dreamed that he was chased by a number of men for trespassing. On analysis he remembered from boyhood an incident comparable to the imagery of the dream, but the real significance of the dream depends on the word "chased." He had been greatly worried as to whether his landlord would chase him out of his home for non-payment of rent, since, whilst he was ill, he could not earn wages. Incidentally, this conflict was prior to his dream analysis unknown to me and knowledge of it proved important in treatment.

Much has been written about the dreams of children. Since these are almost invariably wish fulfilments, they have been taken as proof that the underlying force behind the dream is the wish in the unconscious. As a matter of fact, they merely show that the underlying force behind the dream thought is the same as in waking thought, since a child spends its whole day in wishing; problems which have to be faced by adults are non-existent for children, and only appear after the years have brought integration.

That frequently our adult dreams are also wish-fulfilments cannot be denied, but is not the accomplishment of the wish only one phase of the solution of a problem? It is surely better to regard the whole process as one of adjustment than arbitrarily to take one element, to wit the fulfilment of the wish, as the kernel of the matter!

The examples in Rivers's "Conflict and Dream" may be profitably read in this connection.

It will be noted in conclusion that if my views are correct, dreams are accidental and physiological, though they express themselves in psychological imagery and have a meaning. Their setting is in the present, and the past, in most dreams, is of little importance. It is, of course, true that the present is built on the past, and that, since psychic life is a constant integration, the foundations are worthy of attention, but this is theoretical rather than practical. In the same way, if asked why one wore a hat, it might be attributed to interest in the paternal headgear during babyhood; it would, however, be more to the point to answer that it is comfortable in the open air. Still, there is a possibility that a predilection for a certain type of headdress might be due to influences from childhood. In the "Trespass Dream," indeed, the incidents of the dream were traced to childhood, but it will be observed that the motif is in the present, though the symbol has its foundations in boyhood.

Dreams do not prevent the sleeper from awakening, nor are they the playground in which the libido can work off its repressed energy. In fact, they have no more utility than to give an item of conversation for the breakfast table, a possible clue to the physician as to emotional disturbances, or, as in this case, to provide a convenient subject for testing a theory of consciousness.

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DISCUSSIONS.

I.

PROFESSOR BOYCE GIBSON'S ARTICLE ON RELIGION AND RATIONALITY.

By Sir George H. Knibbs, K.B., C.M.G., etc.

Professor Boyce Gibson's article in the December, 1926, number of this Journal, indicates that, in his judgment, Dr. Rudolf Otto's "Idea of the Holy" fails to recognise that it is only when the numinous state is regarded as but one element, and when it is then associated with certain others, that the essentials of the religious state are attained. The latter elements are, a conviction of the necessity of "Truth," and that the "Idea of the Good" is something infinitely greater than a mere anthropomorphic phantasy. He appears to insist that although religion deals with things that lie beyond reason, viz., with transcendent matters, in the presence of which the human mind recognises the limitations of its rational powers, yet "rationality in its most fundamental and universal form" (faith?) is the religious essential. "Its religious object is rational in a superlative and eminent sense."

Presumably in such matters one endeavours to form clear concepts of the inner experiences of human beings, with a view to embracing them all in a conception sufficiently all-inclusive and unassailable. And further, one is not primarily concerned with the question whether certain dogmas are believed to be appropriate for such purposes as the ethical control and development of mankind. What one *is* concerned with is their validity from the standpoint of verity. In this connection it is well to remember that man's conception of the "ideal of the good"—of God, say—has developed with man's own development, as has been clearly recognised in modern theology.

The earliest known conceptions of this nature are those disclosed in the Shumiro-Accadian documents—the two hundred tablets from the royal library of Nineveh. They reveal that good and evil spirits were believed in: man had personified the causes of the events surrounding and affecting him. From this arose two attitudes, one which thought man must assuredly placate the spirits that were inimical, the other that he must express his appreciation of those that were beneficent. The former attitude gave birth to Shamanism, which even to-day exists in some parts of Asia and Africa. This is the supposed art of placating evilly disposed spirits by magical practices and rites. The latter attitude gave birth to those forms of religion in which "worship" forms an essential part. From the standpoint of verity, logically they seem to be of the same grade, but human experience of the two makes it unquestionable that the form which relies on worship is vastly preferable. Early in the history of man the conception of the essential unity of the whole scheme of things appeared. Zoroastrianism, esoteric Brahmanism, and perhaps to some extent also Hebraism, and certainly Paganism with higher minds, unified the conceptions and reached the monotheistic idea, excepting in so far as concurrent beliefs in an *angromainyu* or a satan virtually invalidate or challenge the idea.

A recent series of interesting essays with the title of "The Inner Life," by liberal evangelicals, admits frankly enough that *man's conception of God grows and changes* with the advance of civilisation and with the progress of human thought. It is admitted, for example, that it is no longer possible to attribute to God things believed formerly—say by the early Hebrews—to be true of Him. In short, it is recognised that human notions of God change with the evolution of man's thought. Obviously, therefore, they are not to be regarded as of the nature of *direct perceptions of God,* but rather as a disclosure of our inner world as revealed to us by introspection. Religious ideas are, then, the results of an attempt to synthesise these elements of the inner self, of our thoughts and feelings. This synthesis may, of course, be so made as to include the data on which mysticism is founded.

In this connexion it is important to bear in mind, that these inner experiences have not the overwhelming authority—as it were—of our perceptions of the outer world. The attempts to assign to them—often made—a superlative degree of reality, if it carry weight with some thinkers, is—one ventures to think—not due to reason, but to a mental habit. Such attempts are an indication of the establishment of a particular attitude of thought, stimulated it may be by a desire to lend weight to a certain view of things. It is unthinkable that a Being, whose reality overshadows without limit the reality of all other things and all other beings, should, in the realms of perception, remain unperceived to such an extent that His existence has to be inferred, if at all, by the most recondite considerations. It is not—like the physical world—self-evident.

One sees, after a comprehensive survey of human inner experiences, that man can so train his mental habits, as to be able to assign great weight to any particular experiences and thoughts. If he keep alive his regard for verity, however, he is assuredly driven to realise that his whole concept "God" is of the nature of a fictive concept. It is beyond the purpose of this discussion to urge this point further. The question has been dealt with profoundly by Hans Vaihinger in his *"Philosophie des Als Ob."* Suffice it to say that the conception of God is *not* one which can be established on veridical grounds. It is based upon an assumption. It is justified by its purposefulness, not by its assured truth. It is a conception the form of which has changed and changed with the lapse of time. When one realises this, Dr. Otto's theme is clearly seen to be one dealing with but one aspect of inner experience, viz., the higher sense of awe, often correlated with the idea of God. Prof. Boyce Gibson is then, urging that, in itself, this particular aspect is inadequate and that it must be fused with the sense of the true and the good in order to fulfil the functions of the fundamental conception of religion.

One may, perhaps must, admit at once that in all probability this is eminently desirable, but are there not facts—one asks—which shew that Dr. Otto is justified in treating the numinous independently of its accidental correlations? Experience has shown that *religious* feeling is often associated with grave ethical defects of character. The Hebrew awe of the mere word "Yahveh" may be instanced as an example. Clemens Alexandrinus, for example, states that Moses killed Nechephre, king of Egypt, *instantly* by merely breathing this name in his ear.

The pagan ritual mysteries uniformly endeavoured to secure the impression of awe, when men were initiated into them. The Hebrew priests made also the same impressions of awe on the people. In many, perhaps in all mysteries, darkness and light and sound were used so as to intensify the sense of dread. Religion was thus made *awesome;* the mysterious was the realm of things dreadful, appealing not to anything definite, but to the unknown.

The certain origin of the sense of fear of the unknown is of course unascertainable. There is no way apparently of unravelling the evolution of this element of man's phychological make-up. There are, however, facts which show that uncanny fears are very easily established in young children, particularly if they are not accustomed to reasoning processes. Hence it would appear as if there were some inner basis which, reacting to such fears, permitted the dread of the unknown to be readily awakened. As a matter of conjecture, it seems not unlikely that, in the unconscious self, there is a weakness arising perhaps from experiences before the dawn of higher civilisation. Man then was doubtless a prey to animals that roamed about in the night. Perhaps even his experience with the lemuridæ were disconcerting. Can this fear, lasting many æons of his earlier life, have come down to us in the form of a complex in his unconscious self, a kind of ancestral memory? One cannot say assuredly that it has, but it is certain that the impression of the sense of fear of the unknown is easier in childhood, the impressionable stage of human life.

Returning to the point that there is no essential connection between the sense of awe and that of verity and of the ideal, one might say that, if it be accepted that "the numinous issues from the deepest foundations of cognitive apprehension that the soul possesses," that it points "to a substantive source from which the religious ideas and feelings are formed, and persists in the mind independently of sense-experience," the task still remains to decide how this apparent deliverance of the inner consciousness is to be apprehended and interpreted. Obviously, one can build into his concept of "God" that He is to be regarded as the ideal holy Being, who is inimical to all untruth. But such a Being is then merely a human construct. There is no possible way in which it can be ascertained whether this supposed Being is merely a human phantasy or indeed a reality, the Reality of realities.

There are however many facts which suggest that it is a mind-construct, under which it is attempted to subsume the experiences—one may quite justly say "the mental phænomena"—of one side of the inner life. For reasons outside the matter under immediate consideration, it has been assumed that all forms of existence, whether material or spiritual, etc., were originatel through creation by, and are perpetually dependent upon, an absolute Being, who—by the very nature of the case—must necessarily be regarded as unlimited in His creative and coordinating powers.

As soon as anything more than *awesomeness* is incorporated in the idea of *holiness,* then there are difficulties. Whatever it be that is conceived as the basis of the unity of the universe, including both the outer world and the inner world of mind, the actual facts of the universe disclose that this basis has no concern with evil, pain, the horrible, uncleanness, foulness and ugliness, cruelty, atrocity, etc. These exist certainly for Man's inner world, but they are incompatible with the idea of holiness, goodness and verity, united in the supposed absolute Being, behind the totality of things physical and spiritual. John Stuart Mill's essay on Nature makes this clear, though his indictment is perhaps less mordant than the facts warrant. It may be added that the difficulty is clearly seen by the mystics (see Dean Inge's "Christian Mysticism").

In order to avoid the admission of this incompatibility, it is customary to assert that the "problem of evil" is "insoluble" or that it is "inscrutable." Is this not merely due to the indefinite sense of the numinous paralysing the mind so that its clarity is impaired, and challenging the free expression of its judgments by appalling fears?

It is eminently self-evident, for example, that the originating of a system of relations between beings and things, and between beings themselves, in such wise that the system his evil possibilities, is the potential cause of evil. If the creation of such a system were not compelled by some considerations, such, for example, as transcend human understanding, this prejudices the view which must follow as to the character of the originator. But were they compelled, then it is equally clear that limitations exist for the originating being, who, *ex hypothesi,* has no limitations, since all that is was created by Him, including all their relations among each other. This consideration counters the conception which had been deemed essential as to the nature of God. There is no *obvious* escape from this dilemma. Is there any escape whatsoever?

It will doubtless be felt by many that there is so intimate a connection between holiness, truth and goodness, that one cannot avoid fusing these conceptions and applying the fused result to the concept, "God." Thus Professor Boyce Gibson fully recognises that for the concept to retain its force and validity, this fusion is necessary. "Truth itself is a religious essential," "the defence of Truth must be a defence of holiness itself," he says; and other parts of his incisive article shew that the "Idea of the Good" must be included, not merely holding us with a super-fascination of awe and wonder, but appearing as supremely rational though transcendent, "rational *sensu eminentiori.*" (There is of course no hopeless difficulty if it be recognised that "God" is but a mental "construct").

First of all, let us consider the remarkable fact that persons regarded as eminently holy have been quite capable of wholly disregarding truth. Augustine, in his thirty-third sermon, says (teste "Mankind, their Origin and Destiny") :— "I was already bishop of Hippo, when I went into Ethiopia, with some servants of Christ, there to preach the Gospel. In this country we saw many men and women without heads, who had two great eyes on their breasts; and in countries still more southerly, we saw a people who had but one eye in their foreheads." Anyone who had formed his opinion of the character of Augustine from the nobler portion of his rhapsodies could not have believed him capable of such utterances. This instance does not stand alone. Origen says that there is often a spiritual truth under a literal falsehood (Comm. in Joan, vol. x., sec. 4) and that the Scriptures have incorporated into their history many things which never took place. Mosheim says (vol. i., p. 382) that it was a maxim of the Church that "it was an act of virtue to deceive and lie, when by that means the interests of the church might be promoted." Bishop Synesius, whose somewhat troubled career and experiences may perhaps have explained his attitude, wrote, A.D. 400, "the people will be deceived, you cannot manage them otherwise . . . . For my part, I shall always be a philosopher in my private capacity, but a priest before the people." Athanasius (*Quæst. ad Antiochum,* vol. ii., p. 357, D.) says that "should we understand sacred writ acccording to the letter, we should fall into the most enormous blasphemies." Beausobre (*Hist. de Manichée*) recognises the existence of hypocrisy among churchmen, and Grotius (Epist. 22) affirms that he who reads ecclesiastical history "reads nothing but roguery and folly of bishops and churchmen." Instances of such testimonies can be greatly multiplied, what are given are sufficient to shew that an unqualified respect for truth is, even in serious matters, after all, a very modern virtue.

Similarly, it may be readily shown that a real and thorough-going respect for goodness is equally modern. Under the doctrine of the Sovereignty of God, conceptions were justified, and actions were approved, which to-day would not be defended. The history of "The Kingdom of God in Muenster" and similar experiences shew, for example, that intolerance and sensual depravity can most certainly be associated with the "religious" feeling: in short we have to face the fact that the conception of "goodness," in the sense of a disposition of the will to benefit others, even at the cost of some sacrifice of "self," is also very modern. Even to-day it is by no means general, nor is it authoritatively received. Theoretically, modern thought affirms that the requirements of "goodness" are that we do always the best possible; but if such a conception be applied to the Cosmos and all that is in and behind it, and to the conception of the immanence of God, we are again in hopeless difficulties.

Do not such facts justify the position of Dr. Otto, and shew that we must make a dissection of the "religious feeling" when it happens to be in the form which commends itself to Professor Boyce Gibson? And does it not shew that Otto is right when he says that the numinous, in this restricted sense, is sensitiveness to a non-rational experience, and moreover one which has no necessary connection with truth or goodness? Further, if it be possible to retain the popular impression that "God" is something more even than a fictive concept of great importance to mankind, it apparently must be admitted that it needs transformation if it is to be ennobled. It is the old trouble. One having done a great wrong to a fellow-being, says to God, "Against Thee, *Thee only* have I sinned."

Otto's conception, as an analysis of the numinous, appears then to be fully justified, notwithstanding that other facts drawn from the human inner world may shew that progress in thought demands that, to fulfil the functions of the highest religious experience, the numinous must be fused with those other elements in the way so lucidly indicated as necessary by Professor Boyce Gibson.

One feels, it ought to be said, that the convincing force of his article really depends upon a belief that in these regions of thought, one is dealing not with mere fictive concepts, but with concepts, however imperfect, of a Reality, a reality transcending human thought— it is true—but nevertheless interpenetrating it; indeed, with a reality which can be assuredly recognised as such. If this surmise be correct one can but say that it seems to us fundamentally indefensible.

Modern thought has sometimes supposed that there can be degrees of substantiality and degrees of reality; it holds also that merely physical and ordinary scientific conceptions are inadequate in that transcendent world revealed in the mind—in the inner life. This may be so, but whether this be so or not, in philosophy it behoves us to differentiate between verity and plausibility. One feels that an analysis of human experience shews that the higher sense of awe and sacredness is only accidentally a correlate of "Respect for Truth," and "Affection for Goodness." With these excellent associates it is of unspeakable value to man's higher life: without them it degenerates into mere superstitious dread. The numinous may be related virtually merely to our horror of the unknown, or it may relate itself quite strictly to our feeling that even a fictive concept can be solemn and awe-inspiring. Whatever view be taken as regards a supreme Reality existing, corresponding to the fictive concept "God," Professor Boyce Gibson's article has made it eminently clear in what way Dr. Otto's conception may well be developed and transformed. Such a development is a great contribution to those conceptions which touch the highest themes of human thought. It leaves the mystery however unsolved, and Job's query (xi. 7) remains still to be answered in the negative.

REPLY BY PROFESSOR BOYCE GIBSON.

In the limits at my disposal I cannot hope to do full justice to the many points raised in the very pertinent and searching criticism of Sir George Knibbs. Nor is it a mere question of space. In this region the innocent babe may knock out philosophy, and if the querist has the subtlety of my critic, the results may be staggering indeed. But I will do my best.

Let me first epitomize the criticism as I have understood it. "The idea of God is a fictive concept. If we admit this, and only then, can we have a sane philosophy based on a regard for verity, a philosophy which faces the facts, frankly recognizing the terrible part played by evil and suffering in the Universe and the impossibility of its being the work of Omnipotent Love. It is true that a fictive theism may be a useful form of belief, and if it can ennoble human life and effort it is so far justified pragmatically. But its claim to be *true* and to have a *real* object, namely, a good God, is baseless. It deludes itself, mistaking the bias of a habit for the force of a proof. It disregards the patent fact that the stream of evolution is strewn with discarded ideas of God which humanity in its growth is constantly outgrowing. Further, Otto's identification of the essential object of religion with the pure numinous has much to support it. Religion may be flagrantly immoral. Its alliance with morality, with the ideal generally, is accidental. We shall indeed promote human welfare greatly by grafting morality on to our primitive awe and fear, but this simply proves the important part played by fictions in human life. Religion and rationality (ideality), as Otto himself maintains, are not intrinsically connected, whereas religion and irrationality are so connected. In conclusion, we hold it to be the besetting weakness of the idealist that he mistakes the shadow of his desire for the real thing, and interprets the mere habits of his optimistic thinking as the laws and principles of a best possible world."

Such, I take it, is the gist of Sir George Knibb's criticism. I will confine myself to a general line of reply, and as we are agreed in our "regard for verity," I will make this respect for truth the point of departure for my argument. How deep this regard for truth is in the case of my critic may be gathered from the fact that it not only compels him to face the terrible facts of evil and suffering and to put away a view of God confessedly ennobling because it does not seem possible to square an imperfect world with a perfect Creator—it compels him also to regard all the greatest goods as fictions because his senses, or rather the ideas founded upon them, do not supply him with the requisite evidence. Truth so regarded is clearly valued for its own sake. It is an intrinsic and not an instrumental value. It has absolute authority and what it does not vouch for must be abandoned. Now, it is under the sanction of this supreme value that "God" is declared to be a fictive concept. God, the Creator, is declared fictive and denied reality because truth will have it that, if he be real, he must be perfectly good. Hence, since the Creator is responsible for evil, he cannot be real. Nothing but perfect goodness will satisfy the soul that seeks reality. The truth that my critic respects is the truth that is in league with such perfect goodness. Truth and goodness are the dominating realities of his mental world. It is in their name that he repudiates the reality of an ideal Creator.

It is no doubt legitimate to conceive of God as Creator, provided one does not pretend to understand what the creative process really implies. Creation must be understood ideogrammatically and in terms of symbols, and of such symbols that which has found most favour with religious thought is the relation of parent to child. Here the mainspring of Creation is love, and we are all God's children. But it is surely a better and more convincing method, philosophically speaking, to start from a conception of God won from our own experience, leaving the meaning of "Creator" to be unravelled later, it may be, only through the maturer thought of later generations of human thinkers. The universal *experience* of aspiration bids us conceive God as the Being or Power able fully to satisfy the deepest need of the soul, the need for perfection itself. Intimate union with perfection, nothing short of this can fully satisfy the soul.

At this point, I take it, the insight of religion makes a characteristic contribution. It maintains, on the supersensible evidence of our deeper life, that the ideal, so infinitely distant, is also infinitely near to the soul that seeks it. Sir George Knibbs refers us to Job XI. 7: "Canst thou by searching find out God?" To this the reply of religion (cf., the well-known words of Pascal) is that unless I had already found God I could not be searching for Him. If we think of God as the Ideal which every rational being makes for in virtue of his being rational, we must conceive Him, if our thought is religious as presently and intimately involved in our very striving after good. So conceived, God is, in literal truth, the soul of our soul, "nearer to us than breathing," the very essence of our inner self. Now, I ask, does not regard for truth and goodness, provided we think methodically and start from experience, compel us to embrace this paradox, and to recognize in Pringle-Pattison's phrase that "the presence of the ideal is the reality of God within us"? If this is so then my critic's fictive concept, "God," coalesces indistinguishably with his own guiding reality and standard, the truth and goodness he respects so deeply. Now, what are we to say when a standard, to the support of which our scientific self-respect and our very humanity is irretrievably pledged, is set down by our thinking as a fictive concept? May it not be that the fictive concept as applied to our thought of God is itself a fictive concept. That at any rate would be, in substance, my own conclusion. It has been objected that the thinking of men of different ages and stages leads them to conceive God, each after his own fashion, and why it is asked, should any one of these be singled out as true? Why should the view that God is the Ideal be more true than any other? Perhaps for this logical reason, that the truth-ideal is the formative principle upon which all concepts, fictive or non-fictive, depend for their shaping. In denying the adequacy of these concepts, in affirming their mere relativity, just as much as in their steady shaping, we are appealing to standards of adequacy and ultimacy, the reality of which must be admitted if criticism and denial are to mean anything at all. "The One remains" whilst "the many change and pass," and it is the One that remains, the truth-ideal, the standard of right and of beauty that we venture to call divine.

Let us turn to the last point. Sir George Knibbs is prepared to endorse Professor Otto's view that what is religiously essential to holiness, namely the numinous, is non-moral, non-rational. My view was, and is, that in a deeper sense of the term, the numinous is essentially, indeed superlatively, rational. Identifying the God of experience with the ideal, and the ideal with a living standard of holiness, super-rational in the sense of being the source and fountain-head of all rationality, and therefore not irrational—far from it—but simply unfathomably and superlatively rational, it seems to me that Otto is wrong when, instead of recognizing that the religious impulse is essential to human nature, he makes of such impulse a special gift (divination); and also deficient in failing to recognize that the impulse springs from the driving power of the ideal as its ultimate and indispensable motivation. Religion, as I conceive it, is the impress of God, within us upon our thought and life. It is God's own intrinsic holiness that first makes us religious, so that holiness and the religious impulse are correlative, each implying the other. To be conscious at all is virtually to be God-conscious. But once our consciousness recognizes that it is, in its essence, not only a synoptic grasp of the universe as a whole, but the profound intimation of a supersensible holiness, a dialectical movement of the spirit is set up which has as its mainspring the desire to realize and organize this revelation in human affairs, and, as its supreme credential of ultimate success, the active presence of the ideal in the desire itself. In and through this dialectic all that is specific and explicit in art, science and morality comes into manifold being. We may therefore have religion without any developed or organized morality. The enthusiasm of holiness precedes the system of right, and we know what dire results may follow when genuine religious impulses refuse to be disciplined into justice or illumined by knowledge. But this does not prove that religious insight is esentially non-moral and non-rational, but only that it is not moral or rational in the restricted and specific sense of those terms. It is too profoundly and wholly moral and rational to be identifiable without remainder with any merely conventional or conceptual development of the ideals of right and truth. The true essential numinous is not the psychologically or sociologically primitive, an object of awe, dread and fascination, but the logically and theologically fundamental, the object of our whole nature's reverential devotion, the superpersonal matrix in which we live and move and develope our personal being. And what is logically most fundamental we take to be the ultimate source and ground of all nationality.

W.R.G.B.

II.

SIMULTANEITY AND RELATIVITY.

By E. V. MILLER, *Auckland, New Zealand.*

PROFESSOR GUNN'S review-article entitled "Bergson and Einstein" in the September issue of this journal contains an account of the eminent French philosopher's criticism of the relativity of simultaneity as expounded by Einstein in his popular treatise: "Relativity, the Special and the General Theory." This criticism appears to meet with the approval of Professor Gunn himself as well as with that of a French writer, M. Maritain; and doubtless numerous other philosophers would also endorse it. Professor Gunn confines his objections to the particular presentation of the relativity of simultaneity contained in the treatise referred to, acknowledging that elsewhere Einstein succeeds in proving his claim;

but Bergson evidently goes much further than this when he concludes that "the multiple times of the theory of relativity are fictitious." As such a conclusion would be destructive of relativity theory, and is reached by so eminent a philosopher, the matter is of interest and importance. I venture in this article to express the opinion—and to give my reasons therefor—that all the objectors have misapprehended the drift of Einstein's argument and the purpose of the railway illustration in Section IX of his popular treatise.

I deem it necessary first to give a sketch of the essential parts of Einstein's presentation of his "special" theory—a sort of skeleton of his main argument as it presents itself to my mind.

In Section IV the author outlines what he means by a Galileian system of co-ordinates, while in Section V, and also in part of Section XVIII, he goes further into this matter and introduces what he calls the "principle of relativity," a principle which is co-ordinate with the Galileo-Newton system of mechanics, and which of course must not be confused with Einstein's own *theory* of relativity which he introduces at the end of Section VII.

The law of inertia, namely, that "a body removed sufficiently far from other bodies continues in a state of rest or of uniform motion in a straight line," is regarded as a general law of nature. But this statement needs elucidation. A star is far removed from other bodies, but its motion as seen from, say, London, is not straight: Londoners see it complete a circle every twenty-four hours. Thus, the law of inertia as stated above without further conditions is untrue. It is no use saying you mean the *real* motion of the star independent of London or any other place, because there is no such thing. Motion, like distance, is always between two things. Einstein takes this as self evident.[1] Could there be, then, any bodies in the universe the motion between any one of which and the remote star would be correctly described by the law of inertia? The reply is, yes—all bodies whose relative motions are uniform and straight. The systems of measurement set up on such bodies are called "Galileian systems."

Coming down to earth and neglecting its rotation, let us imagine that a straight railway embankment is at rest and that a train is passing along it at a uniform speed. There is an observer whom (following Professor Gunn) we will call George, on the bank, and another, Thomas, in the train, each provided with instruments for measuring distance, direction and time. These, then, are two Galileian systems K and

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[1] Relativity, p. 60.

K_1. A raven flies overhead; then, if George finds the raven's motion to be uniform and straight, Thomas will find it to be the same; and an observer on any Galileian system K_n would obtain the same result, though no two observers would find the same speed and direction for the raven's flight. Thus speed and direction are not general laws of nature; but the law of inertia is, because it is expressed in identical terms on all Galileian systems. The staement that all general laws of nature have exactly the same formulation on all Galileian systems is the principle of relativity. There is nothing self-evident about this principle; our belief in it must rest on empirical evidence.[1]

In Section VII another principle is introduced, namely, that the constancy of the velocity of light *in vacuo* is a general law of nature. This principle is spoken of as if it were taken over from the older physics, but there is an ambiguity in the word "constancy" apparently not noticed by the author. The Victorian physicists held that the velocity of light was constant *through the ether,* and it can readily be shown that this view is inconsistent with the constancy of the velocity of light being a general law of nature as above defined. However, our concern is with constancy as a general law, and there can be no doubt that Einstein takes it in this sense and means that an observer on any one of a number of Galileian systems would find exactly the same figure, 300,000 km. per sec., as the result of his measurement of the velocity of light *in vacuo,* whatever might be the relative speeds or directions of these Galileian systems. Constancy in this sense might be called "absolute" to distinguish it from what the Victorian physicists meant.

In the short Section VI Einstein introduces yet another principle. He describes how two or more velocities must be added if we hold the Newtonian—and common sense—concepts of distances and time-intervals, namely, that our measurements of these are not affected by the motion of the system on which they are made. Conformably to these concepts, a man walking at a speed w along a train, which itself is travelling at a speed v, will pass a telegraph pole on the embankment at a speed $v+w$ if he is walking towards the engine, or $v-w$ if he is walking in the opposite direction.

In Section VII Einstein shows, by the example of a train and a ray of light, that if we hold to the above principle one of the two previously mentioned principles must be false. For, if a ray of light be sent along the embankment—the air being removed—with velocity c, in the same direction as the train is travelling, at velocity v, then we must say that an observer in the train, measuring the light's velocity with respect to the train, would find it to be $c-v$; a conclusion which contradicts one or other of the two principles first described. Thus, if we hold by the Newtonian concepts of space and time, it would appear that the principle of relativity and what I have called the "absolute" constancy of the velocity of light are incompatible. Good reasons are now advanced why it would be very difficult to abandon either of these principles. Thus an impasse is reached. At the end of this section, however, Einstein introduces the bold idea of questioning the absolute nature of time and space which is characteristic of the Newtonian view. This idea, it would seem, as a matter of history, led the author to his theory of relativity;[1] nevertheless it is not *logically* fundamental in his theory, as will be shown later. He states that by analysis of the physical conceptions of time and space—obviously implying their emendation—the incompatibility of the two principles disappears, and we can hold both of them.

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[1] *Ibid,* p. 14, p. 60.

In Section XI the question is asked whether, supposing the Newtonian concepts are false, so that Galileian systems have different space-time measurements of the same event, there is conceivable any law relating such measurements in such a way as to make an exception of the event called the velocity of light, so that for that event, and that event only, all observers would get the same measurement. "This question," Einstein says, "leads to a quite definite positive answer, and to a perfectly definite transformation law for the space-time magnitudes of an event when changing over from one body of reference to another."[2]

The author then proceeds to describe and name the usual symbols appropriate to the four-dimensional reference systems which are required for the measurement of events; and, putting the same question again but in more definite form, he asks, "What are the values x', y', z', t', of an event with respect to k', when the magnitudes of the same event with respect to k are given?" the determining condition being that the velocity of light shall be found to be the same in all systems in uniform relative motion.[3] He then shows by an example that this problem is solved by the set of relations known as the "Lorentz transformation," and he gives the complete mathematical solution in Appendix I to the treatise.

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[1] *Ibid.*, p. vi. (preface).
[2] *Ibid.*, p. 31.
[3] *Ibid.*, p. 32.

At this point Einstein's main argument in connection with his "special" theory is completed, for it now only remains to ascertain if the necessary implications of the Lorentz relations lead to and, as it were, foretell the experimental data of physics, and to discuss the philosophic bearing of the theory.

It will be noticed that Sections VIII, IX and X, which contain the illustration of the relativity of simultaneity, do not enter into the argument I have traced; I skip from Section VII to Section XI. Einstein opens the latter section with the remark "The results of the last three sections show that the apparent incompatibility of the law of the propagation of light with the principle of relativity (Section VII) has been derived by means of a consideration which borrowed two unjustifiable hypotheses from classical mechanics." In reality, however, this is an overstatement; it includes the work which is to be done in the section which these words open, and which has not been done hitherto. What has been done in the three sections is to show that on certain premises the physical conceptions of space and time are untenable. It is true that the assertion is made in Section IX that if we discard the classical assumption of absolute time the conflict between the law of the propagation of light and the principle of relativity disappears;[1] but this is merely another example of the same overstatement. Nothing is said in these sections to show that the compatibility of the above two principles follows from the mere untenability of the classical conceptions of space and time, which is all that is proved. The question whether or not freedom from these conceptions will help towards the solution of the larger problem is not discussed. It is asked for the first time in Section XI,[2] and there for the first time is a considered answer given to it.

Another example of the same over-statement occurs in the last paragraph of Section VII. The author says, "As a result of an analysis of the physical conceptions of time and space, it became evident that there is not the least incompatibility between the principle of relativity and the law of propagation of light." It is clear enough that the analysis mentioned consists of the argument of Sections VIII, IX and X, which does not even attempt to make it evident that there is no incompatibility between the principles.

This over-statement is unfortunate in that it has caused many readers to think that in Sections VIII, IX and X Einstein is developing his own theory, whereas in reality he is demolishing a rival one.

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[1] *Ibid.*, p. 27.
[2] *Ibid.*, p. 31, 32.

At the end of Section VII the classical conceptions of space and time are suspect. For the exposition of Einstein's theory it is unnecessary to *prove* them wrong, which is the task attempted in the three following sections; it is necessary merely to *suppose* them wrong. Hence, there is perfect logical continuity between Section VII and Section XI, which picks up the argument where the earlier section left it. Thus, whatever the purpose of the three intervening sections they do not constitute an integral part of the main argument.[1] Hence, if there is any error in them, it will not invalidate the main argument. But the error, if there be one, can hardly be the one described by Bergson. Einstein's illustration amounts to this:—Two lightning flashes strike the rails at a distance apart. George, knowing that he is half way between the flashes and *seeing* them simultaneously—aided by a mirror arrangement—declares that the distant events satisfy the test for objective simultaneity. Thomas, in the moving train, with a similar mirror arrangement, is also half way between the flashes when, according to George's estimate, they strike the rails, but—so George would argue—by the time the light gets to Thomas he has moved nearer to one place and farther from the other. Thus the light, to reach him, would have to travel farther in one direction than in the other, so that he must see the flashes successively, and the test for simultaneity will not be satisfied.

Professor Gunn's account of Bergson's view is that Einstein's reasoning in this example is erroneous because he does not prove that Thomas, in the train, *sees* the flashes successively, but only that George, on the embankment, *judges* that Thomas must see them so. Professor Gunn says that "Einstein has, in Maritain's words, confused the perceptions of Thomas with George's judgments about them, which may be a very different matter and is obviously crucial." I submit that Einstein has fallen into no such error. In this example he is not attempting to establish the fact of the relativity of simultaneity. It would be an unfortunate example for this purpose, since it can be readily shown that the argument gives a result differing quantitatively from that given by his own theory. I am convinced that Einstein was well aware of this. His aim is to show that even arguing from the classical premisses—one of which he regards as false—some measure of relativity of simultaneity is implied. In order to do this he has to show not what Thomas perceives but what George, who has reasons on the classical assumptions, must conclude that Thomas perceives. With other tenets George would have judged that Thomas must see the flashes simultaneously. In either case, what Thomas actually perceives is irrelevant. We are concerned only with the necessary implications of certain pre-suppositions held by George.

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[1] In the epitome of the main argument given in Section XIV. the reasoning in these sections does not appear.

Where Thomas's actual perception would become relevant would be in relation to the further question as to which, if either, set of assumptions is correct. The only way to settle this question is by experiment. Owing to mechanical difficulties we find that theories of motion, space, time, etc., cannot be tested by the railway experiment as described; but they can be, and have been, tested by numerous other experiments, including all those experiments and observations which have been made with the object of testing relativity theory. Einstein indicates—rather sketchily it is true—the experimental basis for the principle of relativity in Section V, and for the constancy of the velocity of light in Section VII; for the special theory of relativity in Sections XIII and XVI; and he has an appendix on the experimental confirmation of the general theory, of which the special theory is a particular case. All such experiments and observations are of course, in the end, appeals to sensory experience, *perçu et vecu,* such as Bergson should approve.

Since, in my view, Sections VIII, IX, and X are not essential to the main argument it is pertinent to ask what their bearing on it may be. The motive for their introduction in this place in the treatise was no doubt Einstein's wish "to present the main ideas . . . . . on the whole in the sequence and connection in which they actually originated."[1] Probably it is fortunate that they did originate in this order. It is conceivable that, if the neat logical argument had presented itself for the first time in history to a mind unprepared by the disintegration of presuppositions achieved in the three sections, the brilliant new interpretation of the Lorentz equations to which that argument leads might well have seemed too utterly grotesque to pursue further, and we might have had no theory of relativity. I suggest, then, that the real effect of the argument of the three sections is to prepare the novice's mind for the inevitable paradoxical appearance of the Lorentz relations of Section XI. If we agree with the reasoning in the three sections they expose a contradiction in the presuppositions of the older physics which renders these presuppositions as a whole self-destructive.

The Victorian physicist, besides holding the classical conceptions of time and space, repudiated the constancy of the velocity of light in the sense described by Einstein; he held that there was one special co-ordinate system—that of bodies at rest in the ether—in which the law of the propagation of light could be most simply formulated.[1] This was the view which led Michelson and Morley to plan their famous experiment, the aim of which was to discover the earth's velocity through the ether.

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[1] *Ibid.*, p. vi. (preface).

In Section VIII Einstein asks the physicist for a definition of simultaneity between events regarded as public non-subjective entities. To meet Einstein's requirements such a definition involves a mechanical scheme whereby the simultaneity of objective events can be tested experimentally, *i.e.,* in the end, subjectively.[2] The physicist after a time succeeds in doing this by an arrangement of two mirrors. Whether Victorian physicists, or modern physicists who reject relativity —if there are any—would find this definition satisfactory is a matter open to discussion. If the definition is rejected the argument of Sections VIII, IX and X fails; but that, as I have tried to show, would not affect the validity of Einstein's main argument. Of course, if the classical physicist rejects this definition he would be asked to supply another which would be equally adaptable to experimental conditions, and there is no saying whether this new definition might not be as obnoxious as the rejected one.

In the railway example, in Section IX, of the relativity of simultaneity, George's argument as to what Thomas will see is the typical Victorian physicist's argument. The velocity of light relative to the train is taken as being different in different directions, and the time and space intervals are taken as being the same on train and embankment. If, then, the simultaneity test is approved, the illustration shows that the Victorian physicist must believe that the distant events, which are shown to be "really" simultaneous if you are on the bank, must be "really" successive if you are in the train. The only way to avoid this contradiction is to admit that, as an outcome of the set of assumptions underlying the older physical reasoning, "every reference-body (co-ordinate system) has its own particular time; unless we are told the reference-body to which the statement of time refers, there is no meaning in the statement of the time of an event."[3] Thus we see that one of the assumptions (absolute space and time) by the aid of which the above conclusion is reached, is contradicted by the conclusion. George's assumptions evidently need revision; and, supposing that we are still satisfied with the method of defining simultaneity, and are determined to retain the principle of relativity and the "absolute" constancy of the velocity of light, we shall be forced to reject the classical idea of absolute time, and perhaps, as is shown in Section X, absolute space.

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[1] *Ibid.*, Section XVI., p. 52; *cf.* Section V. for the possibility of such a privileged system.

[2] In view of Einstein's well-known repudiation of conceptions which cannot be tested by some method involving personal observation, i.e., which cannot be related to something subjective and sensible, one can hardly agree with Professor Gunn in classing him as an "extremist" on the physical side, ignoring psychical considerations.

[3] *Ibid.*, p. 26.

This I take to be the argument of the three Sections VIII, IX and X. It is an episode in the main argument. If we disagree with it our objection could not deter Einstein from proceeding, on the strength of his vision of what caused the conflict disclosed in Section VII, to find the solution of that conflict which he expounds in Section XI, and more completely and satisfactorily in Appendix I.

If, on the other hand, we agree with the conclusions reached in the episode, we see that even from the standpoint of Victorian physics some change is required in the classical concepts of space and time, and we are thus prepared to accept with more equanimity the seemingly paradoxical ideas which Einstein is about to present to us in Section XI and the Appendix. This exposition, in which the argument of the episode does not appear, is based on views of Galileian systems and the propagation of light which are inconsistent with those underlying the "argument of George" in Section IX. I do not believe that Einstein, in that section, is guilty of the futility of attempting to derive a result in quantitative accord with relativity theory from premisses which flatly contradict the relativity postulates. But even if he had fallen into such an error (and other exponents have so transgressed) I believe, and I have tried to show, that his text, including the episode, is, if one over-statement be corrected, open to an interpretation which renders it logically sound and unexceptionable. His theory rests fairly and squarely on its premisses, which contain no inherent contradiction. Whether they are true or not can be tested only by comparison of their necessary implications with our sensory experiences of Nature.

REVIEWS

PSYCHOLOGY APPLIED TO EDUCATION: A SERIES OF LECTURES ON THE THEORY AND PRACTICE OF EDUCATION. By the late James Ward. Edited by G. Dawes Hicks; 1926. Cambridge University Press. Price 10s. 6d. net.

This is a series of fourteen lectures dealing with the psychological bases of education together with some applications to, and reflections on, educational practice. It is of course to be regretted that the lectures could not have been prepared for the press by the author's own hands for as the editor tells us, "had Professor Ward himself been preparing the book for publication, he would have assuredly referred to the more recent literature on the subject." Some of these lectures were written as early as 1880 and at first sight it might be thought that, in a field in which the work appears to be advancing so rapidly, publication of these lectures could serve only a sentimental purpose. Perusal of the lectures shows this view to be very erroneous. In recent years it is true that there have been new and important ferments in education, but the fundamental principles and problems are the same. Even an author may not be the best judge. Dr. Dawes Hicks tells us that Prof. Ward thought that James's "Talks to Teachers" had rendered his own lectures superfluous. This seems to us to be very far from being the case. Good as the talks are, and stimulating as they have been to nearly a generation of teachers, there is ample room for Ward's lectures, which may be said to complement the work of James. James, like Plato, had the wonderful literary facility of throwing bridges across gaps in our knowledge—airy bridges some of them. The student of education will be recalled to earth by Ward's lectures, and, after a thorough study of them, will understand the talks more thoroughly and appreciate them more fully.

In one sense there is nothing new in this book. Those who have studied Ward's "Principles of Psychology" will see the same mind working in these lectures, but they will see it illuminating educational diifficulties by the strong light of psychological principle in the hands of one of wide experience and great insight. It is true that, in the main, the references are to the past. But though the references are to the dead, the work is living. Locke, Bain, Spencer, Carpenter and Galton figure in the footnotes, but when one is reading the lectures he is reminded of current work such as "The Growth of the Mind," by Koffka, and "The Art of Thought," by Graham Wallas. The reason for these associations are not far to seek. In the introduction of the English edition of his work, Koffka writes: "And hence, what I have tried to write is not so much a compendium of facts as an exposition of principles. In short, I have tried to work out some of the chief principles of genetic or comparative psychology, laying special emphasis upon the evolution of the child's mind." Both these authorities deal with principles, and both approach their subject from the genetic point of view. Thus, great though the differences are in the working out of the *gestalt* and the *continuum* psychology, they are not fundamentally antagonistic.

In these lectures Ward covers the psychological principles—from sense training to the development of personality—that have a bearing on education. Every topic that he touches is illumined by the breadth of his scholarship, the depth of his psychological insight, and the wealth of his experience. There is no chapter in which the earnest student of education will not find food for thought, psychological guidance and apt illustration. Difficulties are not burked, but the literary style and the logical arrangement are such that the reader is carried along with the themes and clearly apprehends the points the author so effectively makes.

The silver threads that bind these lectures into a unity are:

1. The demand for the genetic treatment of educational problems. Let the author speak for himself:

"The younger the pupil is the more imperative is it for the teacher to adopt what Bain calls the psychological sequence of subjects, to direct growth that is incipient, but to avoid all forcing and the foolish haste that tries to cram with ready-prepared materials, as if the time required for mastery and assimilation were lost" (page 31).

"There are a few animals in the world that can eat hard for a whole summer, and then, after a good sleep, grow into something lively and handsome; but these are grubs and not children. If a child is to think to any purpose, he must think as he goes on; as soon as the material he has gathered begins to oppress him, he must begin to think it into shape, or it will tend to smother intellectual life at its dawn, as a bee is drowned in its own honey for want of cells in which to store it" (page 52).

2. The necessity of working on principles. "To hurry over foundations because they are out of sight is to produce a structure like Nebuchadnezzar's image: a head of fine gold on feet of miry clay. The more lofty the structure we intend, the more needful is it that it should have good understandings" (page 40).

3. The long view in education; not instruction but training must be the end kept ever in mind.

"It may seem strange that so much stress is laid on systematic thinking. And yet the reason is evident enough. Unless we think systematically, we cannot think clearly and distinctly; and, unless we think clearly and distinctly, we do not really think at all. . . . Strong light is dry light. At all events, I cannot help suspecting that our schools and universities must largely share the blame with those ancient perverters of the truth. And, if they are to blame, it is because they make learning the first thing and thinking the second, place the tradition of knowledge before the training of the mind" (page 87).

"But with us the Battle of Waterloo was not preceded by the sharp lessons of adversity; and, after Wellington's declaration that it had been won on the playing fields of Eton, it is not surprising to find our Parliament in 1820 rejecting, for the second time, a scheme of national education and doing practically nothing for education of any sort for another fifty years. Should the Battle of Dorking become a fact of history, perhaps the commander-in-chief may declare that it was lost in the class-rooms of Eton and similar endowed boarding establishments, where uncultured athletes are taught everything except how to think" (page 160).

4. The planning of our educational methods so that we may develop the individuality and personality of our students.

"The value of a single man or woman of open mind, independent judgment, and moral courage, who requires to be convinced and refuses to be cajoled, is only concerned to be right and is not afraid to be singular, deferring to reason but not to rank, true to his or her own self, and, therefore, not false to any man—the value of such a man or woman, I say, is priceless: a nation of such would leaven and regenerate the world. . . . But the evil influences that formerly delayed the movement are still powerful to check its perfect work. Prejudices venerable only for their age, class interests that are morally unjustifiable, conflicting dogmas that cannot all be right and may quite well all be wrong, still bar the attainment of full liberty of thought and the complete development of each one's personality' (page 183).

We doubt whether the teaching profession could obtain sounder advice, surer guidance and greater stimulation than in the last two essays entitled, "Individuality" and "Personality the Final Aim of Education." If these two essays were really assimilated by the teaching profession of this country there would be an unprecedented advance in educational effort and achievement. We can most warmly recommend this series of lectures to the psychologist and educationist.

T. A. HUNTER.

THE CULTURE OF ANCIENT GREECE AND ROME: A GENERAL SKETCH. By F. Poland, E. Reisinger and R. Wagner: Authorized Translation from the Second German Edition (1924). By John Henry Freese, M.A.; 1926. London: George G. Harrap and Co. Pp. 335. Price 21s. net.

This is a Translation of the second edition of a book entitled *Die antike Kultur in ihren Hauptzügen dargestellt*, which was itself a digest of two earlier works—*Die hellenische Kultur* (third edition, 1913) and *Die hellenistisch-römische Kultur* (1913), both now out of print.

It is apparently only in Germany that this kind of book is made—books daringly comprehensive in range, full of matter as an egg of meat, lavishly and for the most part beautifully illustrated. It is a quite characteristic type; not a dictionary or work of reference to which one wanting to know all about a subject would go, nothing like so full and learned as the well-known *Cambridge Companions to Greek and Latin Studies*—though these again, when compared with German books in which their authors have really set out to show how erudite they are, are apt to look rather like schoolboys' manuals; on the other hand, not the work of amateurs in which enthusiasm for the subject is apt to do duty for knowledge. Perhaps freshness and lavishness of well-chosen illustration is the feature that first strikes one—above all, freshness. In a book of 320 pages of text, we are given no fewer than 136 illustrations (12 of them full page) and two plans, of Athens and of Rome. Nor need one fear to be greeted only by the same old *clichés* which one has seen repeated a thousand times from book to book, that almost conventional repertoire of blocks of which one has grown heartily tired. In the book before us we must, of course, have a certain number of thrice-familiar acquaintances (the Lateran Sophocles, for example; but almost full-page! But spared we are the British Museum Head of Alexander), yet there are plenty of good new things—even, for instance, the exquisite stele of a youthful athlete found at Sunium by Stais in 1917 (p. 141), the relief showing Athenian hockey players (p. 139), with one of the central figures of the Ball players from the same basis (p. 176), and a full page illustration of the Berlin archaic seated goddess.

In 320 pages, of not too small type, to give an account, even in outline, of the culture of ancient Greece and Rome was a bold undertaking. The field is mapped out in seven departments, of Literature, Philosophy and Science, Religion, Art, Private Life, Army, Constitution; each of which has appropriate subdivisions. Art, for example, is treated under eight heads—Aegean, Architecture (Greek and Roman), Sculpture (Greek and Roman), Painting, Industrial Art, Topography—under which last we get something of Athens and Priene, of Rome and Pompeii; Ostia surely, and Delos, and Delphi, should have been included, also Olympia. Plans of these sites, and some description, should not have failed to appear. Of course it is inevitable that much that one would look for must be omitted, but the amount of information conveyed and the range of subjects is astonishing; there is little padding or mere book-making, almost every sentence tells. Naturally, there are not lacking touches of German omniscience and downrightness, as on page 182, where Furtwängler's suggested reconstruction of the Lemnian Athena, by joining a head in Bologna to a torso in Dresden, is accepted without any hint of the dubiousness of the identification. This is hardly fair to the ingenuous reader. Again, on page 50 we read that "women were no doubt excluded from visiting the theatre." As it stands, this is absurd; and even for Comedy the balance of evidence is against it. Here let it be said that the whole Section on the Greek Theatre, which Section bears the curious heading of The Stage, is jejune, and perhaps the only really poor portion of the book.

Occasionally the German seems to have been too much for the translator. What are we to make of the description of the Raft of Odysseus on page 38? "The raft was constructed of beams placed close together side by side. Each consisted of four straight pieces of timber, hammered together with clamps and bolts, the two lower of which formed an obtuse angle, while the other two rose perpendicularly on their ends." This is a great mystery. On page 232, on House Furniture, we read: "It is not until after the Hellenistic period that not only are the articles of furniture that serve practical purposes set up full of effect, but beautiful statuettes, especially of bronze, are also added, in order finally to attain a highly perfect art of interior decoration." We have become familiarised with this strange jargon through more than one recent translation bearing the name of an Oxford scholar, but it appears that they do these things also by the banks of the Cam.

In not a few cases this kind of clumsiness, whether original or imported, may lead the reader quite astray. So on page 19, under Fig. 2, the description reads: "On the right rises the hill of Lycabettus, on the left the low Erechtheion, on the western border the Propylaea, beneath the feet of which lies the Odeion of Herodes Atticus." From this the "general reader" would get the idea that the Erechtheion is a hill, more especially as in the picture the long ridge of Mt. Parnes is seen precisely above the actual ruins of the Erechtheion. "Beneath the feet of" the Propylaea carries the same suggestion. Similarly, on page 217, "near the Dipylon Gate arose the cemetery through which the Eridanus flows," gives the uninstructed an entirely erroneous impression. When he is told, as he is on page 53, that at the end of the classical period a "complete stone building took the place of the unsafe wooden scaffolding which in course of time rested against the slope of the Athenian acropolis," one wonders precisely what idea the concluding words will create in his mind. On page 182, under the Head of the Delphian Charioteer, we are told that "the fine features entirely attracted the attention of the spectator." This is pure imposition; no one knows anything at all about the effect of this great Chariot-group of which this single figure alone has survived.

Sometimes the obvious opportunity has been missed. On page 182 reference is made to the beautiful head of Athena on the Aspasius gem; but why was an illustration not given? And especially on page 178, where under a picture of the Ludovisi Throne, the reader is told that "the splendid counterpart of the reliefs is in the Boston Museum; why again was the Boston Throne not reproduced?

In spite of these sins of omission and commission, the book does give a fairly complete conspectus of Greek and Roman culture. Anyone who reads it through would at the end possess a clear and reasonably full and accurate idea of these two great allied cultures. But for what class of reader is the book in its English dress intended? The Prefatory Note speaks of it as "adapted to the requirements of the public schools and the general reader," and at the same time as being "not without interest to the classical student." The cover speaks also of the "ordinary man" and the "intelligent schoolboy." Putting all these together one would think that few would be left. But how many "ordinary men" or "intelligent schoolboys," or even "classical students," can afford to pay a guinea for such a book? And further, how comes it about that this book, in the German second edition with 230 illustrations in the text, six coloured plates and two plans, bound in cloth, could be sold for nine, now twelve, Marks, as against a guinea for the English edition with one hundred fewer illustrations? The cloth case of the English edition, with its crude black and yellow ornamentation, and central medallion with a caricature in the same colours of the end of a (Doric?) temple, is of terrific ugliness.

W. J. WOODHOUSE.

THE PRIMITIVE RACES OF MANKIND: A STUDY IN ETHNOLOGY. By Max Schmidt. Translated by Alexander K. Dallas; 1926. London: George G. Harrap and Co. Pp. 360. Price 21s. net.

Professor Schmidt remarks in his preface that, since ethnology is now a recognised subject in many universities, there is need for a textbook of the science. The need is certainly a very real one, but it would hardly seem that Professor Schmidt's book, at any rate in the English translation, will be found adequately to meet the need. The work consists of two parts, preceded by a useful introduction on the scope and method and history of ethnology. Part I. deals with "General or Systematic Ethnology" and attempts a systematic survey of culture in general. The author adopts a very special point of view of his own which may be called, perhaps, economic, with the result that, while material culture and economic institutions are treated as fully as space will allow, other aspects of culture are little more than mentioned. Thus the whole subject of religion, which is after all a very important part of the lives of uncivilised peoples, is allotted three pages. The treatment of social organisation is hardly any better. Part II. on "Special or Descriptive Ethnology" gives a condensed description of the peoples of the earth. Here again material culture receives most attention.

It is presumably impossible to avoid errors in a book which deals with so wide a field, but there seem rather more in Professor Schmidt's work than can be reasonably excused. The statement that in Australia "the dominating principle is that of mother-right, and the totem of the child and the place of residence of the family are both determined by the totem of the mother" (page 269) shows that Professor Schmidt does not know much about Australian social organisations. Nor is it true to say that Australian native dances "are gentle rhythmic movements and mimic representations of the act of fecundation." Many equally incorrect statements are scattered through the pages. Thus

Kava is said (page 281) to be "mixed with water and left to ferment." Many of the inaccuracies, however, seem to be due to the carelessness and lack of knowledge of the translator. To say that "the Melanesians excel the Australians and the Polynesians in pottery-work" (page 273) is not a satisfactory way of indicating that the former have pottery, while the two latter have none. "*Roofed in*" is hardly a satisfactory description of a Kayak (page 211). We read of "*pearls* of shell" for "shell-beads" (page 213) and are told that Solomon Islanders fish with "*rods* of tortoise-shell or mother-of-pearl" (page 272) and that they carry out "concerted battues of *tortoises*" when turtle are meant. Is it the translator or the author who is responsible for the strange statement that in the Friendly Islands the houses (or their foundations?) are *pentagonal*? There are some unusual spellings, "fratries" for "phratries" (page 219) and a fondness for "c" in place of the more usual "k" in African names, (*e.g.* Bacalahari for Bakalahari). Bantu, a plural form, is given a final "s" (Bantus) to make it a little more plural. The proof-reader has missed some mis-spellings—"Heitsi Cibib" for "Heitsi Eibib" (page 295), "yacova" for "yaqona" and "Boussonetia" for "Broussonetia" (page 114) and others.

A. R. RADCLIFFE-BROWN.

PRACTICAL PSYCHOLOGY. By E. R. Robinson; 1926. New York: The Macmillan Company. Price 7s. 6d. net.

The title of the text is somewhat misleading since the term is generally accepted as a technical reference to laboratory work as opposed to lecture methods. The sub-title "Human Nature in Everyday Life" is much better chosen, for the book is intended to treat of the relations of psychology to "the personal and social life of the student."

The first part of the work, covering two chapters, deals with the scope and relations of the science and the basic facts of neural coordination. The second opens the discussion upon reflexes and habits. Reflexes are "the basic and inherited types of action," some of which are fixed and others again are subject to modification by learning. The author makes the term "habit" synonymous with all acquired dispositions, even with forms of perception, thought, or feeling (page 46).

Since the principle of habit seems fully adequate, at least in the opinion of the author, to account for all forms of behaviour, the doctrine of "instincts" is totally rejected by him. "There are some who think the instinct theory adequately explains why certain features of behaviour are present in practically the entire human race. According to the usual form of this theory the individual inherits, besides the nerve connections necessary for reflex action, far more complicated nerve connections which ensure his mating, caring for his family, acquiring property and the like, whatever be the accidents of his education. . . There are present in the human infant no complicated forms of behaviour comparable to the so-called instincts. . . It is good training that we must hold responsible for the more usual, loyal parenthood and sociable humanity. . . . The truest and most useful theory of the more universal forms of complex human action is that they are acquired habits, just like the less universal forms of action" (pages 57 and 58).

Such a "Gordian" simplification of the problems of motivation leaves available much space that would otherwise be devoted to the "dynamics" of conduct, and so the problem of habit is treated very fully. Since the classic chapter of James, the present one appears to be one of the most complete and thorough. The problems of habit-formation, fixation and elimination of habits are discussed and further on those of "transfer" and "interference."

The third section is devoted to a treatment of the habit-phases of perception and attention. Perception is made to cover single sense qualities as well as the more complex cognition of an object. In the fourth part, "images" and "concepts" are each allotted a separate chapter, and the processes of memory are similarly treated. Next follows one of the finest portions of the text—a chapter on reasoning and one on imagination. The accounts of these are fresh and often original and show considerable psychological insight on the part of the writer. In his description of reasoning he departs almost exclusively from the lines of formal logic and the syllogism, and offers instead a practical account of mental activities at work solving the practical problems of every-day life.

A chapter on feeling completes the fifth part. This factor tends to pass from simple "pleasure and unpleasure" to more intense emotional reactions. The final section of the book is devoted to a treatment of the problems of personality. One chapter of it deals with the individual as an aggregation of habits, while another is concerned with the elements of mental measurement or "statistics." This section completes the work.

Within the limitations he has set himself the author has drawn upon the best conventional exposition of the science, and, in some sections, combined with it a distinct originality of treatment. Where possible illustrations, mostly from acknowledged sources, are utilised and each chapter concludes with an admirable summary and list of problems for solution by the student. The author's style is smooth and easy, lucid rather than striking. His meaning is unmistakable, and this directness carries with it a strong appeal. On account of its clarity and freshness and, in some parts, the originality of treatment, no teacher of elementary psychology can afford to neglect the book, while every student will benefit from a study of its pages. On the other hand, the deliberate omission of a treatment of the dynamic aspects of behaviour will be regretted by all more catholic-minded psychologists.

A. H. MARTIN.

A FIRST LABORATORY GUIDE IN PSYCHOLOGY. By Mary Collins and James Driver; 1926. London: Methuen and Co., Ltd. Price 5s. net.

This text is companion to the Experimental Psychology of the same authors recently reviewed in these pages. The experiments described cover, in elementary fashion, the usual fields of sensation, perception and attention besides a number of problems usually listed among mental tests included in Whipple's Manual *et cetera*. For lecturers engaged in teaching a simple practical course to first-year students in psychology, the use of the text would obviate the labour of compilation of experiments and the manifolding or printing of laboratory directions.

A. H. MARTIN.

MATTER AND GRAVITY IN NEWTON'S PHYSICAL PHILOSOPHY: A STUDY IN THE NATURAL PHILOSOPHY OF NEWTON'S TIME. By A. J. Snow; 1926. Oxford University Press. Pp. 256. Price 7s. 6d. net.

At a time when the very foundations of Newtonian physics are subject to criticism, a book such as this is especially valuable. Its main purpose is to investigate Newton's philosophical attitude towards his own physical theories. It succeeds in bringing out the essential point, missed by so many critics in spite of repeated statements in the Principia, that Newton professed to give, not a metaphysical explanation of gravity, but a mathematical description based on physical experiment and observation. Nevertheless, scattered throughout his writings are numerous hints of metaphysical speculations; and it is with the interpretation of these that the book under review is mainly concerned.

The general plan of the work is good, and, on the whole, it is well carried out. After an excellent opening chapter on "The Atomic Revival," in which he sketches in the intellectual background, the author discusses Newton's views under the four headings, "Newtonian Atomism," "Newton's Doctrine of Gravity," "'Newton's Metaphysical Doctrine of Gravity" and "The Rôle of Mathematics and Hypothesis in Newton's Physics." Much light is thrown on these topics by the scholia in the Principia, the questions in the Optics and Newton's own correspondence; and these sources are freely used. In order to give full significance to the quotations, the author indulges in frequent digressions on the ideas of Newton's contemporaries and predecessors.

The book contains a good index and a long bibliography, but there are more misprints than one expects in an Oxford University Press publication. In one or two cases it appeared to the reviewer that words, or groups of words, had been dropped from sentences.

H. J. PRIESTLEY.

THE REALM OF MIND: AN ESSAY IN METAPHYSICS. By Frederick J. E. Woodbridge; 1926. New York: Columbia University Press. Pp. 141. Price $1.75.

Professor Woodbridge has made many valuable contributions to various psychological and philosophical journals during recent years. He now publishes in book form the metaphysical conclusions to which he has been led by these independent studies. To call it "an essay in metaphysics" is an unduly modest claim. It is a distinct contribution to the modern interpretation of human experience. Those who are acquainted with the history of the epistemological and ontological problems which await the student on the border line between psychology and metaphysics will welcome this lucid and closely reasoned attempt to afford a solution of at least one of these problems, *viz.*, the Nature of Mind. The author admits the kinship of his theory with the idealistic views of Berkeley and Kant, but he advances to conclusions widely differing from those earlier thinkers by employing the analytic method and many of the assumptions of Neo-Realism. He begins by treating mind not as an abstract entity, nor as an active agent, but as the mere process of thinking. This process, just as natural as walking, when closely examined leads to the discovery of mind in the very structure and order of existence as a whole, antecedent to the thinking of any one individual. "Mind is objective," he says. It is the "logical structure of the realm of being which we explore when we think." This volume, it may be hoped, is the precursor of a larger work in which Professor Woodbridge will be able fully to develop his thesis, which seems to render out of date the barren debates of materialism *versus* idealism and the endless controversies as to the relation of mind and body. In the meantime, this illuminating essay meets a real need in those who have grown dissatisfied with the absolute idealism of Hegel, and who yet distrust the mere polemics of many of the Neo-Realists.

M. SCOTT FLETCHER.

MODERN PSYCHOLOGY AND EDUCATION. By Mary Sturt and E. C. Oakden; 1926. London: Kegan Paul, Trench, Trubner and Co., Ltd. Pp. xxiv + 320. Price 7s. 6d. net.

This little book is intended for use by students beginning the subject, and is specially designed to meet the needs of students preparing for teaching and of evening-class adult students. It should serve its purpose very well for it is simply though accurately written and contains a wealth of apposite illustrations drawn from everyday experience.

The book is divided into three parts. The first gives an account of the instincts, emotions and sentiments; the second describes the forms of intellectual process, sensation, perception, thought and imagination; the third examines certain phases of the conduct of mind—moral training, disorders of mind, mental work and happiness.

There is a well chosen list of topics for discussion and a good bibliography.

A. MACKIE.

HEBREW AND EGYPTIAN APOCALYPTIC LITERATURE. By C. C. McComb. Reprinted from Harvard Theological Review, Vol. XVIII. No. 4, pages 357-411.

This essay, now issued in pamphlet form, sets out to supersede the widely-held theory that Hebrew literature was largely a product of Babylonian influence. Recent investigation has shown more clearly the originality of Hebrew thought and that its debt to cuneiform models and materials was less than was formerly supposed. The researches of certain Egyptologists indicate that the influence of Egyptian thought and literary forms upon Hebrew writings was considerable. Mr. McComb's contribution to the subject consists mainly in making a collection of materials from the investigations of a number of scholars, and in indicating the bearings of the available evidence upon problems of Hebrew and Egyptian Apocalyptic. Assuming the probability of intercourse between the two peoples, the author compares Hebrew and Egyptian Apocalyptic literature in its general characteristics, giving many examples of Egyptian works and exhibiting resemblances to Hebrew Apocalyptic. Whilst the resemblances in form and detail are often striking, the differences between the two national types of Apocalyptic are more striking, and the Jewish moral and religious pre-eminence contrasts strongly with the superficiality of the Egyptian. Mr. McComb concludes with a notice of Egyptian Apocalyptic in Greek and Roman times, and its help in the interpretation of later Old Testament and New Testament writings.

V. A. SPENCE LITTLE.

COMPLACENCY: THE FOUNDATION OF HUMAN BEHAVIOUR. By Robert Bruce Raup, Ph.D.; 1925. New York: The Macmillan Company. Pp. xii., + 197.

Complacency is the name the author uses for the state of equilibrium which results from adjustment. Disturbance of adjustment causes behaviour, and behaviour is energy directed towards the restoration of equilibrium. Such is the thesis of this book. The thesis is important, but it is hardly new. What the author does is to give a new name to a concept already more than implicit in behaviourism, and to render its meaning more explicit.

H. T. LOVELL.

BOOKS RECEIVED.

PRINTING AND BOOK CRAFTS FOR SCHOOLS. By Frederick Goodyear. Published by Harrap, London. Price 10s. 6d.

TRADITION. By W. R. Sorley, Litt.D., F.B.A., being The Herbert Spencer Lecture, delivered at Oxford, 10th May, 1926. Oxford, at the Clarendon Press. Pp. 24.

JOURNALS RECEIVED.

JOURNAL OF PHILOSOPHICAL STUDIES. Edited by S. E. Hooper. Published Quarterly for the Brit. Inst. of Phil. Studies by Macmillan and Co., London. Price 3s. 6d.

Vol. I. No. 4. October, 1926. Logic and Faith: Professor W. G. de Burgh. An Essay in Catholic Philosophy: Sir Henry Slesser. Philosophy and Science: Professor Leonard J. Russell. Behaviourism. A Psychology Based on Reflex-Action: John B. Watson. Economic Art and Human Welfare: John A. Hobson. The Philosophical Significance of Biography: Alexander Knox White. The Irrationality of the Good: C. E. M. Joad. Psychological Survey, etc.

JOURNAL OF PHILOSOPHY. Edited by Professors Woodbridge and Bush, Columbia University. Published fortnightly. 4 dollars a year.

Vol. XXIII. No. 21. October 14, 1926. The Fable of the Bees: Sterling P. Lamprecht. No. 22. October 28. What are the Criteria of Levels? George P. Conger. Evil, Omnipotence and Time: Anderson Woods. The Function of Esthetic Experience: Van Meter Ames. No. 23. November 11. The Sixth International Congress of Philosophy: Horace L. Friess. No. 25. December 9. The Nature of the Vitalistic Dilemma: Ralph S. Lillie. Naïve Psychological Realism *versus* Critical Realism: Horace B. English. No. 26. December 23. On Certain Difficulties in the Modern Doctrine of Essence: Mary W. Calkins.

PSYCHE. Edited by C. K. Ogden. Kegan Paul, Trench, Trubner and Co. London. Published Quarterly. Price 5s.

No. 26. October, 1926. The Eighth International Congress of Psychology; Psychology in the Encyclopædia: Editorial. Social Excitation in Religion: Pierre Janet. The "'Margery Mediumship": Wm. McDougall. The Diffusion of Culture: G. Elliot Smith. The Life of Culture: Bronislaw Malinowski. The Spread of Buddhism: H. J. Massingham. The Social Life of Man from the Standpoint of Animal Behaviour; Friedrich Alverdes. The Status of Psychology in the United States: A. A. Roback. The Possibilities of Race

Improvement: Francis B. Sumner. Baboons, Hypnosis, and Insanity: Eugene N. Marais.

INTERNATIONAL JOURNAL OF PSYCHO-ANALYSIS. Official Organ of the International Psycho-Analytical Association. Baillière, Tindall and Cox. London. 30s. per annum.

Vol. VII. Parts 3-4. October, 1926. To Sigmund Freud on his Seventieth Birthday: Sandor Ferenczi. The Origin and Structure of the Super-Ego: Ernest Jones. The Problem of Acceptance of Unpleasant Ideas: S. Ferenczi. The Flight from Womanhood: Karen Horney. Neurosis and the Whole Personality: Franz Alexander. Projection: G. Jelgersma. The Genesis of the Feminine Super-Ego: Carl Müller-Braunschweig. A Psychological Factor in the Ætiology of Descensus Uteri: John Rickman. Schizophrenic and Creative Thinking: Robert Wälder. A "Technical" Form of Resistance: Edward Glover. The Sources of Neurotic Anxiety: Wilhelm Reich. A Type of Anal-Erotic Resistance: Isador H. Coriat. The Psychic Effects of Intoxicants: Sándor Radó. The Conception of the Ego: James Glover. The Sense of Guilt and the Need for Punishment: H. Nunberg. Some Variations in Ego-Feeling: Paul Federn. Psycho-Analysis and Organic Disorder: Smith Ely Jelliffe. The Psychology of Study and Examinations: Ernst Blum. The "Doctor Game": Ernst Simmel. A Contribution to the Understanding of Sado-Masochism: J. Sadger. Abstracts, Book Reviews, etc.

ARCHIVES DE PSYCHOLOGIE. Edited by E. Claparède. Geneva. London: Williams and Norgate. Price 4 francs.

Vol. XX. No. 78. September, 1926. L'Enseignement Psychiatrique d'Adolf Meyer: Henri Flournoy. La Contradiction et L'Esprit Humain: Adrien Naville. La Psychologie, Science Autonome: G. Heymans. Le VIII^e Congrès internationale de Psychologie: Ed. Claparède. Enquête sur le Patriotisme: B. I. E. Mémoire chez la poule: Ed. Claparède. Bibliographie.

THE ECONOMIC RECORD. Journal of the Economic Society of Australia and New Zealand. Melbourne University Press and Macmillan and Co. Price 5s.

Vol. II. No. 3. November, 1926. Federation and Finance: L. F. Giblin. Forecasting Economic Conditions in Australia: H. Barkley. The Australian National Dividend: J. T. Sutcliffe. The Industrial Revolution in the Far East: J. B. Condliffe. Suggestions for Improving the Melbourne Wholesale Prices Index Number: J. L. K. Gifford. The Immigration Problem in Australia: G. L. Wood. The Efficiency of Australian Manufacturing: F. C. Benham. Reviews, Notes, etc.

SCHOOLING. Edited by A. Mackie and P. R. Cole. Published by Teachers' College Press, Sydney. Five issues yearly. Price 5s., post free.

Vol. X. No. 1. November, 1926. The Teaching of Science: E. N. McQueen. The Poetry of Harpur: P. R. Cole. An English Secondary School: M. Dickinson. Vision in Teaching: C. Hamilton. The William Thompson Masonic School: G. Mackaness. Teaching Children by Correspondence: R. E. Paine.

ARCHIVOS BRASILEIROS DE HYGIENE MENTAL. Extracts from Official Organ of the Brazilian League of Hental Hygiene. Rio de Janeiro. No. 2. December, 1925.

Hygiene Mental: Prof. Henrigue Roxo. Cirurgia e hygiene mental: Dr. Alberto Farani. A esterilização dos grandes degenerados: Dr. Renato Kehl. Da Prophylaxia do Suicidio: Dr. Xavier de Oliveira. O elemento psychico no trabalho humano: Dr. Carlos Penafiel.

ARCHIVIO GENERALE DI NEUROLOGIA, PSICHIATRIA E PSICOANALISI. Edited by M. Levi-Bianchini. Official Organ of the Italian Psycho-analytic Society. Annual subscription (outside Italy), 6 dollars. Teramo, Italy.

Vol. VII. No. 3. November, 1926. Presbiogenesi: Prof. M. Levi-Bianchini. Il Concetto Di Patoclisi: Oscar Vogt. Quatre Cas de Cysticercose Cerebrale: Prof. C. I. Urechia and Prof. S. Milhalescu. Osservazioni sopra un Caso Perspicuo di Encefalite Epidemica Cronica Infantile A Tipo Psicastenico: Dr. G. de Nigris. Bibliografia.

WELFARE WORK. Journal of the Institute of Industrial Welfare. Monthly. London. 5s. per annum.

THE MEDICAL JOURNAL OF AUSTRALIA. Sydney. Published weekly 1s.

NOTES AND NEWS.

Emeritus Professor Francis Anderson, editor of this Journal for the past four years, has relinquished that office. Professor Anderson, with his wife, Mrs. Maybanke Anderson, is at present in Europe enjoying a well-earned rest from his labours. Readers of the Journal will regret his retirement, while members of the Australasian Association of Psychology and Philosophy cannot sufficiently express their thanks to him for undertaking the arduous task of launching a new journal. For the time being, the duties of editor are being discharged by Professor Lovell.

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The Challis Chair of Philosophy in the University of Sydney, rendered vacant by the death of Professor Bernard Muscio, is to be occupied by Mr. John Anderson, M.A., Lecturer in Philosophy in the University of Edinburgh. The appointment was made at a meeting of the Senate held on 6th December last. Professor Anderson, who is a brother of Professor W. Anderson of Auckland University College, graduated M.A. (Glasgow) in 1917, with First Class Honours in Philosophy, Mathematics and Natural Philosophy. After graduation he was awarded the Ferguson Scholarship in Philosophy and the Shaw Philosophical Fellowship. These scholarships were won after examination in competition with graduates of the four Scottish universities. From 1917 to 1920 Mr. Anderson acted as Assistant in Moral Philosophy and in Logic in the University of Glasgow, and in Philosophy in University College, Cardiff. For the last six years he has been Lecturer in Logic and Metaphysics at Edinburgh.

Another appointment of interest, made by the Senate of the University of Sydney at the same meeting, was that of Dr. William S. Dawson, of Maudsley Mental Hospital, Denmark Hill, London, who is to succeed Sir John Macpherson as Professor of Psychiatry. Dr. Dawson is a graduate of the University of Oxford, holding the degrees of B.A., M.B., Ch.B., M.D. (Oxon.), as well as a diploma in Psychological Medicine of the University of London. He is also a member of the Royal College of Physicians of London, and served for three years in the Great War. Dr. Dawson was Senior Assistant at Maudsley Hospital and Lecturer in Clinical Psychiatry in the University of London. Recently he spent ten months in the United States as Rockefeller Research Fellow. There he was principally engaged in research in clinical psychiatry under Professor Adolf Meyer at the Phipps Psychiatric Institute, Johns Hopkins Hospital, Baltimore, where he also acted as instructor in medical psychology.

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Professor A. B. Fitt, M.A., Ph.D., of Auckland University College has been appointed to a Travelling Fellowship under the scheme recently inaugurated by the Rockefeller Foundation, and will spend a year in research work in America. The subject of his investigation will be a critical analysis of the operation and administration of the systems of Mental Testing in vogue in various American centres, principally as applied to education.

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In the latter half of last year Mr. H. L. Fowler, M.A., a graduate of the University of Western Australia, was granted an Orient Travelling Scholarship, to enable him to pursue advanced study in psychology, especially as applied to education. Mr. Fowler has settled at University College, London, for a two years' course of research and general study under the supervision of Professor Spearman, who has already commented favourably upon his accomplished and projected work. The special subject of Mr. Fowler's research will be "The Formation of Concepts in Education." Mr. Fowler was formerly a lecturer in the Teachers' Training College of Western Australia, and acted for a time as lecturer for the Department of Philosophy within the University.

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The Council of the Australasian Association of Psychology and Philosophy has elected the following office-bearers for 1927:

President: Professor J. Alexander Gunn, M.A., B.Sc., Ph.D. (Melbourne).

Vice-Presidents: Emeritus Professor Francis Anderson (Sydney), Professors W. Anderson (Auckland), W. R. Boyce Gibson (Melbourne), T. A. Hunter (Wellington), M. Scott Fletcher (Brisbane), J. McKellar Stewart (Adelaide).

Editor of Journal: Professor H. T. Lovell (Sydney).

Honorary General and Business Secretary: Dr. A. H. Martin (University of Sydney).

Honorary Treasurer: R. G. Watt.

Honorary Counsel: C. M. Collins, B.A., LL.B.

Honorary Auditor: W. Bruce Rainsford, A.I.A.A.